



Developing renewable energy projects

A guide to achieving success in the Middle East

Egypt

May 2015



EVERSHEDS

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Our clients include Governments, institutional investors and funds, international developers, utilities and banks.

We have over 100 lawyers focussed on the sector based around the world and in the Middle East have teams in Abu Dhabi, Dubai, Jordan, Saudi Arabia, Iraq and Qatar. In Egypt, Eversheds works closely with Shahid Law Firm, one of the leading law firms in the country. We are currently jointly engaged on a number of infrastructure projects in the country with them, and we are proud to have such strong local law capability available through their office.

We are proud to have been awarded MENA Law Firm of the Year 2014/15 by MESIA and are committed to helping create a successful renewable energy sector in the MENA region.

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Acknowledgements

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This report is available for download from www.eversheds.com/energy and www.pwc.com/me

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Forewords

It has been a mixed year for the renewables sector in the Middle East.

The K.A.CARE program went on hold in Saudi but we remain calmly optimistic that a sector will emerge in the Kingdom. We saw significant progress in Jordan where Eversheds was fortunate enough to advise on 10 out of the 12 projects and can vouch first hand at how committed Jordan is to the renewables sector. The UAE is also gathering momentum with the current DEWA and MASDAR tenders and with both Emirates promoting roof top solar programs.

The sector is certainly more active now than it has ever been and the focus is now on Egypt. The development and funder community is now wholly engaged in the sector throughout the region and it has been our honour and a pleasure to work closely with them to help identify and succeed with opportunities.

We are delighted to be collaborating with PwC again to bring you this guide on the Egyptian renewables sector, following on from our previous guide published in January 2015 'Developing renewable energy projects- A Guide to achieving success in the Middle East' and we hope that you will find this report helpful and informative.

As always, please do not hesitate to ask Eversheds or PwC if you have any questions or need any help at all. Many thanks also to Harry Boyd-Carpenter at the EBRD and Bryanne Tait at the IFC for their superb insights.

MEED kindly allowed us to use parts of their Mena Renewable Energy Report which is credited throughout. Thank you MEED for the important events and publications you continue to organise and produce and for the valuable service you provide to our sector.

I wish everyone in the sector the greatest success and hope that we will see even more projects and development come to fruition across the region this year.

Michelle

Michelle T Davies

Global Head of Clean Energy, Eversheds LLP



Middle East Law Firm of the Year 2014
and Woman of the year 2013 & 2014



Eversheds most active legal advisor to clean energy project & asset finance deals in 2014
Clean Energy Pipeline Global League Tables 2015



In a review that we carried out in 2014, it was clear that the last few years have seen a continued evolution of renewable energy technologies globally.

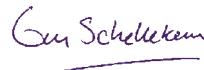
Dramatic falls in underlying costs mean that many projects can now compete directly with fossil fuel power in a number of markets. The technologies themselves are also more robust and better able to generate even in under less favourable conditions. New project developers are adapting technologies to create new deployment opportunities and applications.

Blessed with good solar and wind potential, we are now beginning to see similar developments in the MENA region. Recent tenders have attracted strong international interest and projects have been advanced in many countries. Risk perceptions are falling as experience grows and agreed national targets will ensure that progress continues in the coming years.

However for projects to scale up and become programmes will require certain market prerequisites to be in place. Many countries in the region are for example currently grappling with how to transform their existing structures and processes to support greater development and integration of renewables. The good news is that opportunities exist for governments to build on lessons learned in other countries and avoid early mistakes when launching renewable energy programmes.

Looking ahead, I remain excited by the prospects for renewable energy projects across MENA although the path to get there will have challenges in the medium term. We hope that this Guide will be helpful for both Government and business in developing a better understanding of how some of these challenges can best be overcome.

This Egypt report has been developed as an addition to the previous guide entitled "Developing renewable energy projects - A guide to achieving success in the Middle East" published in January 2015 to support recent announcements and activities now underway in Egypt.



Gus Schellekens
Sustainability Leader, PwC Middle East

Egypt



Egypt Overview¹

Area	1,001,450 km ² (2014)
Population	86.9 m (2014)
GDP	Total: \$284.9 (2014) Per capita (PPP): \$11,100 (2014)
CO ₂ Emissions ^{2,3}	Total: 206.29 m tons (2012) Per capita: 2.43 tons (2011)

Egyptian Power Sector (2013)⁴

Installed capacity	31 GW
Peak demand	27 GW
Peak demand growth	5%
Installed capacity requirement by 2020	60 GW

Retail Price Levels

		US cents	Local Currency (Piastre)
Power ⁵	Min (2014)	0.94/kWh	7/kWh
	Max (2014)	9.95/kWh	74/kWh
Fuel ⁶	Petrol (2015)	33/liter	246/liter
Water ⁷	Min (2014)	3/m ³	23/m ³
	Max (2014)	34/m ³	240/m ³

¹ CIA Factbook

² The data only considers carbon dioxide emissions from consumption of fossil fuels.

³ EIA

⁴ MEED

⁵ MOEE

⁶ Numbeo

⁷ HCWW

Key Bodies referred to:

CRCICA	Cairo Regional Centre for International Commercial Arbitration
EETC	The Egyptian Electricity Transmission Company
EgyptERA	Egyptian Electric Utility and Consumer Protection Regulatory Agency
HCWW	Holding Company for Water and Wastewater
MOEE	Egyptian Ministry of Electricity and Renewable Energy
NREA	New and Renewable Energy Authority
OPEC	Organization of the Petroleum Exporting Countries
UNCITRAL	United Nations Commission on International Trade Law

Key Terms used:

BOO	Build Own Operate
BOOT	Build Own Operate Transfer
BIT	Bilateral Investment Treaty
FIT	Feed-in-Tariff
GDP	Gross Domestic Product
GW	Gigawatt
JSC	Joint Stock Company
kWh	Kilowatt Hour
LLC	Limited Liability Company
MW	Megawatt
PPA	Power Purchase Agreement
PV	Photovoltaic
RE	Renewable Energy

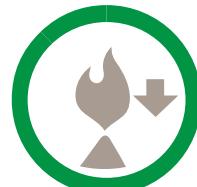
1.1. Context and Key Drivers

Egypt is the largest non-OPEC oil producer in Africa and second largest natural gas producer. However, it is also the largest oil and natural gas consumer in Africa. Natural gas and oil are the primary fuels used to meet energy demand, and accounted for 94% of total energy consumption in 2013.

A shortage of input fuels is a contributing factor in Egypt's frequent electricity blackouts. Other factors include rising demand, aging infrastructure and inadequate generation and transmission capacity. The political and social unrest in Egypt over the last few years has also slowed the government's plans to double installed generation capacity with a further 30 GW by 2020. Increasing Egypt's domestic renewable energy capacity will help diversify its energy mix and improve energy security.

Furthermore, the large scale deployment of renewable energy would:

- **Free up gas for more profitable uses:** Potential natural gas exports in Egypt have previously been diverted to the domestic market to meet growing energy demand. Consequently, Egypt's gas exports declined by an annual average of 3% from 2009 to 2013. Developing domestic renewable energy would ensure that more natural gas is available for export.
- **Meet growing demand:** Egypt's peak demand is expected to grow at a rate of 5% annually. This increase in demand and declining oil and gas production mean that Egypt needs to diversify energy production to fill these gaps or face further electricity blackouts.



Egypt's gas exports declined by an annual average of 3% from 2009 to 2013.

- **Leverage the advantageous geography and climate:**

Egypt has very rich renewable energy resources. The global horizontal irradiance is 2,450 kWh/m²/year, and direct normal radiation is 2,800 kWh/m²/year. Wind full load hours at 3,015 hours/year is the highest among Arab countries, especially in the Gulf of Suez.



Egypt has very rich
renewable energy
resources.



Zafarana Wind Farm, Egypt⁸

1.2. Market Readiness

Recent political upheavals, while increasing overall market risk, have not affected Egypt's long term commitment to renewable energy. Although private sector investment in renewable energy is a relatively new market in Egypt, the country's high potential and the government's commitment to increasing its renewable energy output make it a potentially attractive investment opportunity.

Key initiatives which demonstrate Egypt's commitment to renewable energy include:

- **Energy subsidy reform:** Electricity subsidies cost the government almost \$2 billion in 2013-14 in addition to fuel products subsidies of about \$14 billion, which contributed to a high budget deficit. However, the Egyptian government has recognised the regressive nature of these subsidies and committed to subsidy reform. In early 2013, the government increased slab tariffs for electricity for heavy industries, reduced subsidies on inputs for electricity producers, and increased tariffs for households that consumed more per capita. The Government has published details of further tariff increase to be implemented in coming years with the aim of achieving a break even point and fully remove subsidies by 2018. Egypt is also in the process of implementing a smart card system to re-target subsidies towards those most in need.
- **Net metering & feed-in-tariff:** In January 2013, the Egyptian Electric Utility & Consumer Protection Regulatory Agency (EgyptERA) adopted a net-metering policy that allows small-scale renewable energy projects to feed in electricity to the grid. Going forward, generated surplus electricity will be discounted from billed balances. In September 2014, the Egyptian Ministry of Electricity and Energy announced specific feed-in-tariffs for electricity generated by distributed solar and wind sources as part of the government's efforts to increase the country's energy capacity in the face of the serious power shortage in the mid term.



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- **Dedicated funds:** In January 2012, the cabinet approved a renewable energy fund dedicated to financing renewable energy projects. Clear determination of sources of financing and procedures for disbursement of funds to renewable energy projects are still under discussion.



- **Renewable energy-focused research centers:** The New and Renewable Energy Authority (NREA) is the Government entity responsible for promoting and supporting renewable energy. The Energy Research Center and Cairo University are the main technical research centers in Egypt.
- **Land access:** The government has allocated more than 7,600 km² of desert land for deployment of future public and private wind farms. All permits for distributing this land have been handed over to NREA.

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1.3. Current Project Status

Given the need to reduce national dependence on residual domestic and imported gas, Egypt has announced that it will place greater emphasis on its considerable solar and wind potential.

The Egyptian government expects the renewable energy sector to produce 20% of total power generation by 2020, 12% of which will be generated by wind energy alone. Both wind farms and the secondary priority area of biodiesel production are supported by the country's abundance of land, stable climate conditions and competitive labour force.

In January 2015, The Egyptian president Abdel Fattah El Sisi said that the country would maintain its aggressive energy strategy, which includes 4.3GW of renewable energy projects through the FIT scheme. Solar accounts for 1,300MW and wind accounts for 2,000MW.

In addition to the FIT scheme the Egyptian Electricity Transmission Company is tendering for a 250 MW wind project in the Gulf of Suez and a 200MW solar PV project, both under build, own and operate contracts. Four out of six eligible consortia submitted their bids for the wind projects. The process of evaluation of the tenders was initiated on 19 April 2015. As this Guide goes to print, the winner of this wind tender has not been announced.

NREA stated in January 2015 that 67 solar applicants and 27 wind applicants have been selected to take part in developing over 4.3 GW of renewable energy projects in the country.

Key Renewable Energy Facts (2013) ⁹	
Installed Capacity	3.4 GW
Pipeline Capacity	1.2 GW ¹⁰
Targets	20% by 2020
Implied Capacity	12 GW by 2020

Current Renewable Energy Projects Status (as of 2014)				
Project	Technology	Status	Size	Location
Kom Ombo PV	PV	Main Contract PQ	200 MW	Aswan
Gabal El Zeit	Wind	Main Contract Bid	220MW	Suez
Gulf of Suez	Wind	Main Contract Bid	250 MW	Suez
Gulf of Zayt	Wind	Execution	120MW	Red Sea
Assiut Barrage & Hydropower Plant	Hydro	Execution	40 MW	Asyut
Egypt Ministry of Electricity & Energy - Gabal El Zeit Wind Farm	Wind	Complete	200 MW	Red Sea
Kureimat Hybrid Power Plant: Solar Island Package	PV	Complete	20 MW	Cairo
Zafarana	Wind	Complete	545MW	Suez
Naga Hammadi Barrage	Hydro	Complete	64 MW	Naga Hammadi

⁹ MENA, EIA

¹⁰ REN 21

1.4 Regulatory Policies

Committed to the development of the renewables sector, Egypt has recently passed the Renewable Energy Law. The new law sets out the regulatory framework for renewables in Egypt. The executive regulations of the law have not yet been issued. A new electricity law has also been approved by the State Council and is expected to be issued soon.

In addition to the Renewable Energy Law, a number of existing policies and regulations remain applicable to the sector.



Law No. 102 of year 1986 - Establishes the New and Renewable Energy Authority (NREA).

Current policies and regulations

- **Companies Law No. 159 of the year 1981 (as amended)** - Establishes the requirements for incorporation of an SPV and the general rules for its management.
- **Investment Law No. 8 of the year 1997 (as amended)** - Mainly sets out investment incentives, customs exemptions, the allocation of land to investors and the means of settlement of any disputes arising between the investors and the relevant Egyptian authorities.
- **Law No. 102 of the year 1986** - Establishes the New and Renewable Energy Authority (NREA). NREA has the primary role of promoting and developing renewable energy in Egypt. Its mandate includes identifying and allocating sites for renewable energy projects.
- **Presidential Decree No. 326 of the year 1997 (as amended)** - Establishing the Electric Utility and Consumer Protection Regulatory Agency, affiliate of the Ministry of Energy and Electricity, responsible for the issuance of permits and licenses for generation, transmission and distribution of energy.

- **Prime-Ministerial Decree No. 1947 of the year 2014** - Establishing feed-in tariffs for electricity generated from renewable sources. The purpose of the feed-in tariff is to guarantee a fixed price for energy producers (for 25 years for solar energy projects and for 20 years for wind projects) to encourage investment into the renewable energy sector.
- **Renewable Energy Law No. 203 of the year 2014** - Governs the establishment of power generation projects from renewable sources, and generally sets out the rules applicable to the allocation of land for such projects, the connection to the national grid and the sale of the power generated from such projects in accordance with the feed-in tariff.

Upcoming policies and regulations

- **The Executive Regulations of the Feed-in Tariff Law** - Expected to be issued soon.

- **New Electricity Law** - The new Electricity Law is expected to be the main legislation governing the power sector in Egypt. The draft law has been published in 2008 and submitted to the Parliament for approval. To date, the draft law has not been passed, but was approved by the State Council and is expected to be passed soon.



The new Electricity Law is expected to be the main legislation governing the power sector in Egypt.



1.5. Governing Laws

Counterparties and governing laws

A developer will need to enter into a number of contracts to develop a renewable energy project in Egypt. We set out below the relevant counterparty and law applicable to each of the key contracts:

Contract	Counterparties	Governing law
Real Estate Contract (freehold/leasehold) for the SPV premises	Owner/Landlord	Egypt
Usufruct Agreement for the project's plot of land	Government	Egypt
SPV Bylaws	Shareholders	Egypt
Network Connection Agreement	Egyptian Electricity Transmission Company	Egypt
Power Purchase Agreement	Egyptian Electricity Transmission Company	Egypt
Cost Sharing Deed	Egyptian Electricity Transmission Company	Egypt
PPA Direct Deed	Egyptian Electricity Transmission Company, Ministry of Finance and Lenders	Egypt
Guarantee	Ministry of Finance	Egypt
EPC Contract	Third party contract	Negotiable
Operation and Management Contract	Third party contractor	Negotiable

The choice of the governing law of the finance documents is usually subject to the agreement of the parties. If finance is not obtained from Egypt, it is common for finance documents to be governed by English Law. Egypt allows for both Islamic and Non-Islamic finance.

Dispute resolutions/considerations

Egypt has a well-developed court system of three tiers: the court of first instance, the Court of Appeal and the Court of Cassation. Further, the Cairo Regional Centre for International Commercial Arbitration (CRCICA) is a well-established venue for the settlement of disputes either through mediation or arbitration.

The Egyptian Arbitration Law No. 27 of the year 1994 follows the principles of the International Chamber of Commerce and the United Nations Commission on International Trade Law (UNCITRAL) arbitration rules.

Save where the Egyptian courts or local arbitration through CRCICA have mandatory jurisdiction, international arbitration is often favoured as a dispute resolution mechanism in key contracts.

Egypt is a signatory of both the ICSID and the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards. Egyptian courts have a good record of enforcing foreign arbitral awards. However, due to new enforcement tactics introduced in 2008, enforcement may sometimes be delayed depending on the case.

Egypt is also a signatory of a number of bilateral and multilateral treaties for reciprocal enforcement of judicial awards such as the Riyadh Convention on Judicial Cooperation between States of the Arab League.



Egypt has a well-developed court system of three tiers: the court of first instance, the Court of Appeal and the Court of Cassation.

Bilateral investment treaties

A member of the World Trade Organisation since 1995, Egypt is party to numerous regional and international trade initiatives and market access agreements.

Among others, Egypt is party to the Agadir Free Trade Declaration, Greater Arab Free Trade Agreement, Common Market for Eastern and Southern Africa Trade Agreement and Egypt-EFTA Free Trade Agreements.

Egypt also has a wide network of Bilateral Investment Treaties (BITs). There are currently 112 BITs signed and in force. These include BITs with Australia, China, Denmark, France, India, Kuwait, Malaysia, Russia, Switzerland, United Arab Emirates, Indonesia, United Kingdom, Japan, South Africa and the United States. Other BITs are being negotiated.

Egypt's BITs secure the common protection against expropriation without compensation, guarantee free transfer of investments and returns, most favourable nation treatment, fair and equitable treatment and provision of full protection and security of foreign assets and rights.

Egypt is not a party to the Energy Charter Treaty. Although it has Observer Status in the organisation, this does not allow investors to invoke the investor - State arbitration provisions in the Treaty.

Accordingly, if an investor wishes to access investment protections for a clean energy investment in Egypt, it should consider not only whether a treaty is in place between Egypt and the investor's home State, but also the terms of the potentially applicable treaty or treaties to evaluate whether its investment will be covered by one or more treaties. Careful structuring of an investment can allow an investor to maximise its protection under international investment protection instruments.



Egypt has been
a member of
the World Trade
Organisation
since 1995.

Employment considerations

Employment relationships are governed by the Labour Law No. 12 of the year 2003 (Labour Law).

The Labour Law applies to private sector employees regardless of their activities. Save for limited exceptions, the Labour Law does not differentiate between Egyptian and foreign employees. Investors should be aware of the following employment-related considerations:

- **Annual Pay Rise** - The Labour Law sets out a mandatory rise of wages at a rate not less than 7% of the employee's basic salary based on which social contributions are calculated.
- **Guarantee of Benefits** - The Labour Law generally does not allow the decrease of the employees' benefits. Also special disciplinary rules set out in the Labour Law apply, and dismissal of employees must be pronounced by the Labour Tribunal.
- **9:1 Ratio** - A ratio of at least nine Egyptian employees to every foreigner is applicable to employers wishing to hire foreign employees, unless specially exempted.
- **Termination of Employment Contracts** - Developers should be aware of the rather restrictive Labour Law provisions in relation to the classification of definite and indefinite employment contracts and the applicable termination processes.
- **Distribution of Dividends** - At least 10% of the net profits of a company (save for limited liability companies with a capital of less than EGP 250,000) and Investment Law companies, following the March 2015 amendment of the Investment Law No. 8 of the year 1997 determined for distribution should be distributed to the employees provided that such distribution does not exceed the total annual salaries of the company's employees.



The Labour Law sets out a mandatory pay rise of wages at a rate not less than **7% of the employee's basic salary** on which social contributions are calculated.

1.6 Investment

Setting up a business

- **Incorporation** - Generally foreign investors would invest through a limited liability company (LLC) or private joint stock company (JSC). Save in certain specified sectors, 100% foreign ownership is permitted. A LLC is the simplest form of company and may be managed by one or more managers. It has no minimum capital and its capital is divided into quotas. A JSC has a minimum capital requirement of EGP 250,000 and its capital is divided into shares. It is managed by a board of directors.



A LLC is the simplest form of company and may be managed by one or more managers.

FIT projects must be incorporated in the form of a JSC with a minimum capital requirement determined by NREA. This is at the moment set at EGP 15,000,000.

Pursuant to the general corporate rules applicable, the payment of the issued capital of SPVs may be apportioned as follows: 10% of the issued capital must be paid at incorporation, to be topped up to 25% within three months from incorporation, and the remaining 75% to be paid within five years from incorporation.

The SPV (in the form of a JSC) must be incorporated by a minimum of three shareholders, including the lead developer and other qualified investors. The winning consortium (or single developer) must hold at least 51% of the capital of the SPV at least until commercial operations date (COD) and the lead developer must alone hold not less than 25% of such capital at least until the lapse of two years from COD.

- **Maximum Capacity** - The authorized MW capacity for any SPV awarded a PPA for a solar or wind project under the FIT scheme may currently not exceed 50MW per site.

- **Participation** - The total share capital of any member in several consortiums may not exceed the total capital required to establish FIT projects with a capacity of 100 megawatts per site per technology (solar PV or wind), provided that each shareholder shall present a declaration disclosing its shareholding percentages in the share capital of other qualified SPVs. However, after the lapse of two years from COD, the total share capital requirement will be waived.
- **Change of Ownership** - The lead developer may not be changed before the second anniversary of the commercial operation. Consortium members may be replaced or changed by an equivalent or superior party, subject to confirmation by the Feed-in Tariff Unit. EgyptERA must be notified of any change in the shareholding structure following COD.

Development assets - real estate, security

NREA is responsible for the allocation of Government - owned plots of land to developers for the establishment of their solar and wind FIT projects. The land is allocated to developers on a usufruct basis for a term of twenty-five years for solar projects and twenty years for wind projects in consideration for two per cent of the value of the sold energy. Material permits are already in place for such plots. A Usufruct is usually provided for BOO schemes as well.

Payment structures

For FIT schemes, following the incorporation of the SPV, agreements will be signed with EETC, NREA and the Ministry of Finance (see section 1.5(a) above). The sale of power is dealt with under the Power Purchase Agreement. For BOO schemes, a PPA is entered into with the successful bidder following evaluation of technical and commercial proposals.

Permitting

In both BOO and FIT projects, the bidder is responsible for obtaining the necessary permits and licences to carry out operations. In addition to any permits which must be obtained for the incorporation of the SPV or the transfer of its ownership, the production, transmission and distribution of energy produced from renewable sources must be authorised by EgyptERA.

1.7 Support Mechanisms

Bidding processes

Under BOO schemes, tenders tend to follow a route similar to the conventional power sector in that there will be a prequalification round following which bidders will submit technical and commercial proposals for evaluation, and subsequently EETC will enter into a PPA with the successful bidder. The government will provide the site in BOO schemes.

In the mid-1990s, independent power producers (IPPs) participated in the electricity generation field through the construction of privately-developed power plants under BOOT arrangements and 20-year power purchase agreements.

In the early-2000s, the government invited offers from private developers to qualify in international competitive bids issued by EETC to operate renewable energy farms under BOO arrangements.

In 2014, when the FIT scheme was launched, all qualified developers who did not have access to private land for their FIT project were entitled to apply to NREA for the allocation of land. The land is allocated on a first-come first-served basis based on the investors' preferences and the plots' availability. The developers are granted access to the land for a period not exceeding fifteen months to undertake the necessary technical measurements and studies, upon the signing of a memorandum of understanding for land access with NREA.

The capital of the SPV can be used, immediately following incorporation, towards the payment of all costs involved in the FIT project.



The land is allocated on a first-come first-served basis based on the investors' preferences and the plots' availability.

Support mechanisms - key points on PPAs, FITs etc

Fichtner Consulting was recently appointed to draft the Power Purchase, Usufruct, Connectivity, Cost Sharing and Direct Agreements. These draft documents were made available to the developers on 09 April 2015.

- **Cost Sharing Deed** - Creates a framework for each Developer to pay its share of costs to enable EETC and NREA to construct energy and road infrastructure necessary for the FIT.
- **Power Purchase Agreement** - Sets out all technical, commercial and legal terms and conditions for the construction, operation and maintenance of the FIT facility and the sale and purchase of electricity.
- **Network Connection Contract** - Sets out the terms and conditions on which the power producer may connect to the transmission system and use it to supply electricity to the buyer under the Power Purchase Agreement.
- **Usufruct Agreement** - Establishes the user's rights of usufruct over the FIT site and the basis on which the user may use the site.
- **PPA Direct Deed** - Provides for the financiers' right to step into the Power Purchase Agreement in case of an SPV default. It also includes a guarantee from the Government over the buyer's payments under the Power Purchase Agreement.

The Egyptian power sector in transition: setting the context

This publication focuses on renewable energy in Egypt, with attention inevitably drawn to the new feed-in tariff scheme and the recent success of Egypt's first large-scale wind tender, the 250 MW Gulf of Suez BOO project. But renewables form just one part of the power sector, still dwarfed by conventional generation, which in turn is just one part of the value chain. It is important therefore to set the recent exciting developments in a broader context.

Two transitions

In late 2012 the European Bank for Reconstruction and Development (EBRD) began operations in Egypt. At that time the Egyptian state owned around 95% of generating capacity and substantially all of the transmission and distribution networks, while oil and gas fuelled more than 90% of electricity generation.

In April 2015 the landscape is essentially unchanged. But in April 2018 it is reasonable to believe that the situation will be radically different. There could be 80 or more private energy generators across the country, most of them renewable, dramatically changing both the ownership of generation and the source of the electricity Egypt consumes.

The next few years promise two fundamental transitions:

- A **physical** transition as Egypt moves from generation that is overwhelmingly fuelled by oil and gas, supplemented by the Aswan dam, to significant, and growing, reliance on wind and solar.
- A **structural** transition as Egypt moves from a sector that is centralised, fully regulated and state-dominated to one that is diverse, deregulated and with a growing private participation.

These two transitions are closely linked in two important ways. First, the renewable energy business is fragmented, with many different actors occupying varied niches. It is a business that, unlike conventional generation, makes sense at a small scale. The Egyptian feed-in tariff scheme, with projects capped at 50 MW and limits on market concentration, is deliberately designed to exploit these facts to ensure the introduction of a diverse range of participants to the sector.

Second, a feature of the Egyptian feed-in tariff scheme is the explicit pass-through of its costs to end-users. Certain customer groups will be required to purchase a proportion of their electricity from renewable energy. The default route for this purchase will be a purchase from the Egyptian Electricity Transmission Company (EETC), which will in turn purchase power under the feed-in tariff scheme.

But in due course it is expected that private renewable generators will enter the market to compete and sell their power to end-users without relying on a feed-in tariff or EETC's intermediation. In other words the feed-in tariff scheme is also a mechanism to promote bilateral, unregulated power sales. Indeed, as industrial tariffs rise, there are already merchant renewable projects under development.

Power sector reform

The structural reform of the Egyptian power sector will progress further when the revised Electricity Law is approved.

This will lay the foundations for a series of reforms, notably the strengthening of the electricity sector regulator and in particular passing to the regulator the power to set tariffs, gradual price liberalisation, beginning with the largest consumers, and the ownership unbundling and transformation of EETC into an independent transmission system operator. The private participation this is intended to foster is already moving forward, both through the renewables programme, and through the tendering for the 2 GW gas-fired Dairut project.

These are major steps, and experience of other markets tells us that they will take time. But the direction of travel is clear.

It is towards an electricity sector that has a greater role for private companies, with the state increasingly focused on policy setting, regulation and networks. It is towards a sector that has arm's length relationships between its different constituents and one where prices are transparently determined and disclosed.

The essential precursor to all these reforms however was the Egyptian government's July 2014 energy subsidy reform.

This increased tariffs for all energy products for all consumers substantially.

Importantly, for the electricity sector, the government set tariffs for the next five years, with significant annual growth each year.

This bold step sent a message not just that energy costs have to rise but also that this structural shift is persistent. This is key in attracting investors, who must believe that energy will be properly valued and energy provision fairly remunerated.

Crisis and opportunity

The Egyptian power sector is reforming and changing because it has to, but also because it has a great opportunity to grasp. It has to reform because the current model is unsustainable. A growing population, a growing economy, and changing consumption habits are overwhelming an infrastructure that cannot secure sufficient fuel, convert that fuel to electricity and deliver power reliably to consumers. At the same time the subsidies that system relies on drain state resources from other urgent needs, including healthcare, education and investment in social infrastructure.

The system therefore needs both dramatically to improve its efficiency and to access resources of capital, innovation and organisational skills that are as broad and as deep as possible. That means inevitably opening up to the private sector and creating the circumstances where private companies can invest, innovate and manage.

Egypt's great opportunity is that, just as it faces an energy crisis, the renewable energy sector is delivering cost and efficiency that, in a country with Egypt's world-class natural resources, make it truly competitive with conventional energy.

Two examples suffice: the well-known sub 6 USDc/kWh price for solar power offered by ACWA Power in Dubai in 2014, and the c. 4 USDc/kWh cost of wind power proposed in Egypt's Gulf of Suez BOO tender in April 2015.

These prices send two messages that underscore why Egypt's reforms are the right thing at the right time: first, that renewable energy does not need to be a financial burden on consumers but can be thought of as just another competitive source of energy, and second that well-managed competitive pressures generates efficiency beyond expectations.

When the speed, scalability and low risk of renewable deployment is also considered its potential to alleviate Egypt's energy supply crisis emerges.

The role of International Financial Institutions

For EBRD the theme of transition is welcome and familiar since fostering the transition to market-oriented economies is the Bank's central mandate.

Our role, alongside the other development banks and international financial institutions active in Egypt, is to provide finance, advice and confidence to these reforms, drawing respectively on our balance sheets, our experience in other markets and our institutional commitment to the process.

The challenge for the IFIs, however, is to be a catalyst for the involvement of private, commercial capital. Egypt's investments needs, in excess of USD 6 billion just for the first round of the feed-in tariff programme, will exceed the combined resources of the IFIs involved, especially when the country's many other investment needs, both public and private, are taken into account.

The focus of the IFIs is on structuring projects that are robust and sustainable, that can attract capital from the widest range of private investors. For this reason much of the efforts of the EBRD and other IFIs in the renewable energy sector has been dedicated to working with the Egyptian authorities to structure a contractual framework that allocates risks and rewards in a predictable, logical and fair way.

Conclusion

Egypt's renewable energy sector would be exciting if looked at in isolation. Its development offers the chance to transform the supply of electricity quickly and cheaply. But broader significance of this development emerges when seen as part of a much larger reform scheme.

Egypt's renewable energy mechanisms will introduce a range of private investors to the sector; they will disclose the true costs of energy supply; they will promote, and open the opportunity for, bilateral contracting; and they will require the emergence of an independent, commercially oriented transmission network operator.

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Renewable energy project financing: environmental and social considerations

The development of all solar and wind projects will have both environmental and social implications, with the scale and nature of such impacts dependent on a number of factors including, among others, plant size, location, nearest settlements and proximity to environmental designations.

This chapter discusses some of the key international environmental and social standards and principles. These requirements should be considered to enable successful delivery of a renewable energy project which will be acceptable to international lending institutions.

In order to deliver a project, work should be carried out in accordance with the requirements of the key standards and principles set out in the following sections.

Equator principles

The Equator Principles (EP) consist of ten principles which relate to environmental and social assessment and management. In addition, they include reporting and monitoring requirements for Equator Principles Financial Institutions (EPFIs).

The EPs set a financial industry benchmark, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects.

There are currently 78 EPFIs in 34 different countries. These financial institutions have officially adopted the EP standards, and will therefore not provide finance to clients who do not, or are unable to, comply with the EPs.

Some of these lenders such as the European Bank for Reconstruction and Development (EBRD) or other international or local financial institutions may have additional standards to be adhered to.

The EPs apply globally and to all industry sectors, including the solar and wind industries.

The ten EPs are as follows:

EP1 - Review and Categorisation.

EP2 - Environment and Social Assessment.

EP3 - Applicable Environmental and Social Standards.

EP4 - Environmental and Social Management System and Equator Principles Action Plan.

EP5 - Stakeholder Engagement.

EP6 - Grievance mechanism.

EP7 - Independent Review.

EP8 - Covenants.

EP9 - Independent Monitoring and Reporting.

EP10 - Reporting and Transparency.

The IFC Performance Standards on Environmental and Social Sustainability relate to the following key topics:

Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts.

Performance Standard 2: Labour and Working Conditions.

Performance Standard 3: Resource Efficiency and Pollution Prevention

Performance Standard 4: Community Health, Safety and Security.

Performance Standard 5: Land Acquisition and Involuntary Resettlement.

Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

Performance Standard 7: Indigenous Peoples.

Performance Standard 8: Cultural Heritage.

Compliance with the IFC Performance Standards will not only facilitate a socially and environmentally sustainable project but will also facilitate the sourcing of finance for the project. In addition, a set of Guidance Notes, corresponding to the Performance Standards, was developed by IFC to offer helpful guidance on the requirements contained in the Performance Standards, including reference materials, and on good sustainability practices to improve project performance.

IFC performance standards on social and environmental sustainability

Equator Principal 3 states that countries not designated as High Income OECD countries should apply the social and environmental sustainability standards laid down by the International Finance Corporation (IFC).

These standards have been developed for the IFC's own investment projects but have set an example for private companies and financial institutions worldwide.

In addition to Equator Principal 1, which discusses impact assessment where there are multiple projects located within close vicinity, the cumulative nature of impacts must be considered for both wind and solar projects. Please refer to the IFC Good Practice Handbook on Cumulative Impacts Assessment for further information.

World bank group environmental health and safety (EHS) guidelines

The World Bank Group EHS Guidelines are a set of technical reference documents containing general and industry specific examples of good international industry practice.

The General EHS Guidelines contain guidance relating to environmental, health and safety issues which are applicable across all industry sectors.

The industry sector EHS guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs and are designed to be used together with the General EHS Guidelines document. Specific EHS Guidelines which are recommended for reference include the **EHS Guideline for Wind Energy** and the **EHS Guideline on Electric Power, Transmission and Distribution**.

Local, national and international environmental and social legislation and regulations

As is commonly known, environmental and social legislation and regulations vary between countries and specific regions, however; the EP and IFC Performance Standards set the minimum acceptable standard for developments worldwide.

A large number of countries have national legislative requirements which are on a par with or higher than the EP / IFC standards and guidelines. In this instance, the more stringent national requirements should be reviewed and adhered to.

In countries where environmental and social legislation requirements are less demanding, a project seeking financing by the IFC / EPFI must be developed in accordance with these requirements but must also commit to comply with the EP / IFC standards.

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This report has been developed as an addition to the earlier published guide titled “Developing renewable energy projects – A guide to achieving success in the Middle East”. The complete guide can be downloaded from www.eversheds.com/energy and www.pwc.com/me

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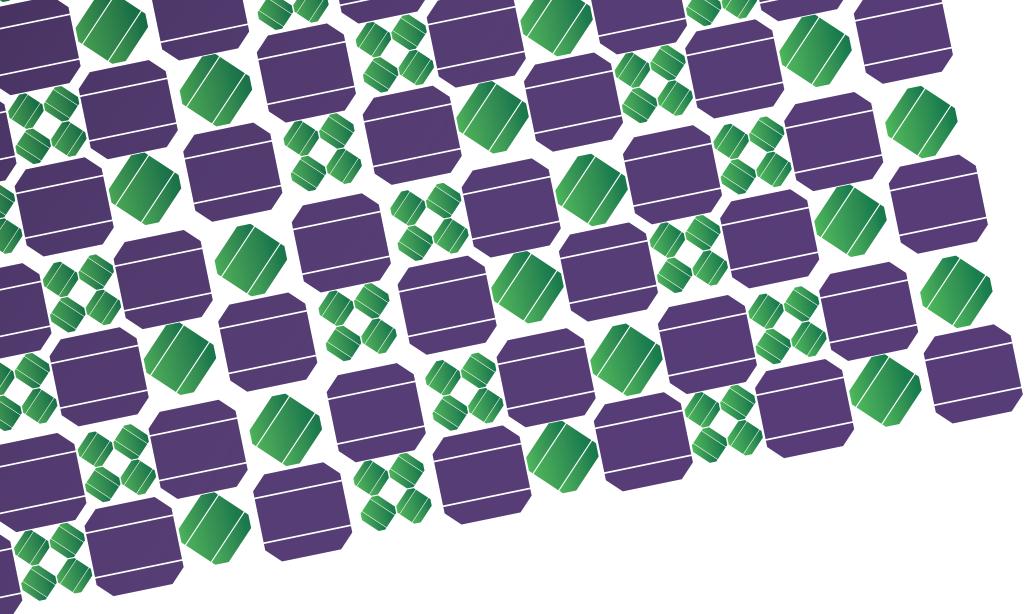


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