

OUTLOOK FOR RENEWABLE ENERGY IPP IN EGYPT | September 2020

I. Introduction: Renewable Energy Current Landscape:

The Egyptian Government has set renewable energy targets of 20% of the electricity mix by 2022 and 42% by 2035. However, by the end of 2019, the nominal capacity for electricity production in Egypt sat at 56 GW, with a surplus of about 25 GW. This means that Egypt has used 31 GW or just 55% of its available electricity capacity. That's why the Egyptian Government set targets up to 42% of generation from renewable sources by 2035 (compared to an installed capacity of just 6% in 2020) is quite intriguing. This is because the demand is expected to reach around 70-85GW by 2035. Therefore, the Egyptian Government's long-term plan would then imply that the generation capacity could be expanded to 160 GW. In other words, Egypt would have 87% of reserve margin by such time, which is far in excess of the more modest target of 20%-30% recommended in 2015. Accordingly, it remains to be seen how Egypt will accommodate such excess over the coming years, whilst still going forward with its plans for the electricity mix in 2035.

II. Renewable Energy IPPs Regulatory Framework:

In Egypt, an independent power plant ("IPP") may, subject to applying for and successfully being granted a generation license, sell electricity to private consumers under two different schemes; the net-metering scheme and the wheeling scheme. Both schemes are regulated by the Egyptian Electricity Utility and Consumer Protection Regulatory Agency ("**EgyptERA**") and involve the relevant network operator, being the relevant Distribution Company ("**DisCo**"), or the Egyptian Electricity Transmission Company ("**EETC**") in relation to the Transmission Grid.

A) NET METERING SCHEME

The net metering scheme, regulated by EgyptERA, allows consumers who have installed a solar plant on their premises (whether on rooftops or ground-mounted) to contract with EETC or the competent DisCo, depending on their connection voltage, for the installation of a bi-directional meter in order to set-off their electricity consumption with the excess electricity they feedback to the network. The regulations also recognize the consumer's right to enter into a Power Purchase Agreement ("**PPA**") with a third-party solar energy developer. The net metering scheme - as recently amended in May 2020 - requires for power plants owned by one customer to have either a cap of either

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- (a)** 25 MW cumulative of several solar net-metering projects connected to the distribution network; **or**
- (b)** 20 MW per project.

Any excess to the off-taker's electricity bill set-offs is accredited to the off-taker's month-to-month balance, until the end of the DisCo's/EETC's financial year (end of June of every calendar year). If there remains an outstanding credit at the end of the financial year, EETC or the DisCo (as applicable) will buy the remaining credit at a price equivalent to the average cost of electricity produced. This price is determined in accordance with the latest service cost report announced annually by EgyptERA and usually is a fairly low price. While net-metering for consumers connected to the Transmission Grid is theoretically possible under regulations, no template agreement with the EETC has yet been published.

Further, EgyptERA has introduced in May 2020, a new integration fee to be borne by net-metering projects. This fee represents the integration charge of solar energy into the distribution network or the transmission grid. This integration charge relates to the production of energy and is not considered as a wheeling fee. In addition, in the case of a medium voltage network connection, an additional study should be conducted by the DisCo or by third-parties to assess the impact on the network at the customer's expense, ensuring that there is no reverse current that feeds the transport networks of the EETC or one of its customers in any event. The cost of this study will also be borne by the client (be it the off-taker itself or the solar developer).

Parameters of the Net-Metering Scheme

The net-metering scheme applies solely to solar energy projects and allows for excess energy generated by the power plant to be evacuated to the relevant Distribution Network or the Transmission Grid, as applicable. The net-metering scheme is further subject to the following parameters:

- (i)** The plant must be connected to a network, either the Transmission Grid (for hyper and high voltages) or a Distribution Network (for medium and low voltages);
- (ii)** The power plant's capacity must not exceed 25 MW cumulatively or 20 MW per project.
- (iii)** The consumer may not hold a distribution license for the same net-metering project;
- (iv)** The total installed capacity of solar power plants projects connected to any single DisCo may not exceed 1.5% of the peak load of the DisCo registered by the meters

during the financial year preceding the contract. In this regard, EgyptERA has published in August 2020, the available capacities for each of the 9 DisCos operating in Egypt.

- (v) The total capacity generated from solar net-metering projects (past and future) may not exceed 300MW. It is understood that the remaining available capacity is currently set at 225 MW, which is to be split into the two following chips:
 - a. 125MW for capacities up to 500kW;
 - b. 100MW for capacities greater than 500kW up to 20MW.
- (vi) To prevent the consumer from backing up the extra capacity on the grid as well as oversizing the station, EgyptERA has regulated the installed power of the net-metering station to not exceed the maximum load of the consumer during the fiscal year prior to the commercial operating date of that power plant.

Renewable Energy Certificates (RECs):

The net-metering regulations also entail that Renewable Energy Certificates (“**RECs**”) shall be issued by EgyptERA to the customer (i.e., the off-taker) evidencing the renewable origin of each MW/h, provided that the power generated from the solar plant is not less than one (1) MW/h per month. It is worth noting that the rules with respect to the issuance, trading, and redemption of RECs have not yet been issued by EgyptERA. However, this indication in net-metering rules may not be in line with some expectations that the RECs will be tied to the power generation license (i.e., issued by EgyptERA to the licensee entity, which is the solar developer and not the off-taker).

B) WHEELING SCHEME:

Under the wheeling scheme, an IPP can construct a plant of any capacity and energy type and utilize the Transmission Grid operated by EETC or a distribution network operated by a DisCo (as applicable) in order to sell electricity to off-takers connected to the same network. Access to the Transmission Grid or distribution network is granted in exchange for a wheeling fee. The wheeling fee is published by EgyptERA and revised every two years. The fee can be changed by the network operator (i.e., EETC or the DisCo), subject to EgyptERA’s approval. This means that shifting the burden to the off-taker on a full carry forward basis in the PPA or other methods to shift such risk is important to preserve the economic balance of the PPA.

The Wheeling Fee

The wheeling fee is published by EgyptERA and revised every (2) year. It is important to note that the wheeling fee can be amended by EETC or the relevant DisCo (as applicable)

but only subject to EgyptERA's approval. This means that shifting the burden to the off-taker on a full carry forward basis in the PPA or other methods to shift such risk is important to preserve the economic balance of the PPA. In this respect, many off-takers usually push-back on a complete pass-through of the wheeling fee, considering it as an unidentifiable risk. We believe that some comfort may be derived from the fact that the applicable wheeling fee is also part of the utility tariff applicable to the off-taker. Hence, an increase in the wheeling fee will automatically translate into an increase in the utility tariff applicable to the off-taker, unless the Government decides to partially subsidize the tariff.

Only the wheeling fee for the Transmission Grid has been announced by EgyptERA. In other words, no wheeling fee has been approved yet for the Distribution Network. From a regulatory perspective, the Electricity Law explicitly imposes an obligation upon DisCos to make their networks available for wheeling with no preferential treatment and on the same tariffs and terms for all participants. Accordingly, no regulation prevents from wheeling on the Distribution Networks. However, in practice, wheeling is still not available on Distribution Networks as no wheeling fee has been published yet, and no official templates are issued for wheeling agreements with DisCos.

III. COVID-19 Impact: Freezing Electricity Tariffs:

In addition to the various hurdles introduced by EgyptERA in May 2020 for the net-metering projects placing serious doubts on the future outlook for investments in renewable energy IPPs in Egypt, the Ministry of Electricity has further exacerbated the impact by amending its plans for laying off subsidies in the electricity sector. There are three main elements to the Ministry's decision to restructure electricity prices. **First**, the Ministry has extended the period before it will lift subsidies by an additional three years, to mid-2025. **Second**, the Ministry has placed a freeze on electricity prices for the next five (5) years for extra-high voltage, high voltage, and medium voltage activities, which will immunize the industrial sector from subsidy cuts. **Third**, the Government will subsidize electricity for the industrial sector by 10 piasters per kilowatt/hour throughout the next five (5) years. The Ministry's decision represents a guarantee to investors that the electricity costs will remain the same for a period of five (5) years and an assurance to business owners that subsidy cuts will not affect them.

IV. Conclusion: Renewable Energy IPP Future Landscape:

Despite the above and how the renewable energy sector might be regarded as struggling at the moment, savvy investors are always able to absorb such unexpected shocks.

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First, the Egyptian Government has reached several interconnection agreements to export its surplus electricity. For example, the government has agreed to export 3GW to Saudi Arabia, 2GW to Greece and Cyprus, and 0.3 GW to Sudan. These agreements might be seen as pilot projects for exporting more of Egypt's electricity surplus. **Second**, the demand for electricity might accelerate at a higher rate as plans for massive production of electric vehicles are underway. Also, solar energy could be used as an optimal solution to power up water desalination projects, which is currently a high priority for the government, given the current water crisis in Egypt. Moreover, it seems that there is a political will to support the industrial sector in Egypt, which could absorb a huge portion of such a surplus. **Third**, there are still investment opportunities for renewable energy IPPs in off-grid solutions, especially in the agricultural sector (i.e., solar pumping solutions). We understand that there is an early adopter investment movement in the field of energy battery solutions as well. This movement could unlock potential opportunities for the renewable energy sector in Egypt.

S&P Expertise in Renewable Energy

- ❖ Representing Several Renewable Energy Developers in preparing their applications for the Feed-in Tariff Program with the Egyptian Government.
- ❖ We are advising NOMAC on the operation of its Solar Energy Projects in Egypt.
- ❖ Representing KarmSolar in preparing its O&M and EPC agreements in conjunction with a Net-Metering Solar Project.
- ❖ Representing BioEnergy in dealing with the Egyptian Government in relation to its Waste-to-Energy project in Egypt.
- ❖ Representing EverGreen and Infinity Power Systems in preparing Corporate Power Purchase Agreements.
- ❖ Representing The Solar Company in preparing the necessary contractual instruments for launching a new solar product in the Egyptian market.
- ❖ Representing Solar Installer in its several EPC projects in the Solar Industry in Egypt.

COMPARISON BETWEEN NET-METERING & WHEELING SCHEMES

Field of Comparison	Wheeling	Net-Metering
Location	Generation of electricity is off-site	Generation of electricity is on-site
Technology	Applies to Solar and Wind Energy	Applies to Solar Energy only
Max. Capacity	No Cap on generated electricity	25 MW for projects cumulatively or 20 MW per project
Cash Reconciliation	Cash Reconciliations are done at the end of the Contractual Year	Cash Reconciliations are done at the end of June
Price of Reconciliation	Cash Reconciliations are done at the weighted average price of renewable energy power plants owned by NREA	Cash Reconciliations are done at the last price paid by EETC to a solar power producer
Wheeling Fee	A Wheeling Fee applies	No Wheeling Fee applies; however, an Integration Fee Applies
Multiple Off-takers	Ability to have more than one Corporate Off-taker (i.e., Aggregator)	No Ability to have more than one Corporate Off-taker
Agreements	The Agreements are signed by the IPP itself	The Agreement is rather signed by the Corporate Off-taker