

# GLOBAL ENERGY (TAQA PV) ENVIRONMENTAL AND SOCIAL DUE DILIGENCE (ESDD)

## Non-Technical Summary

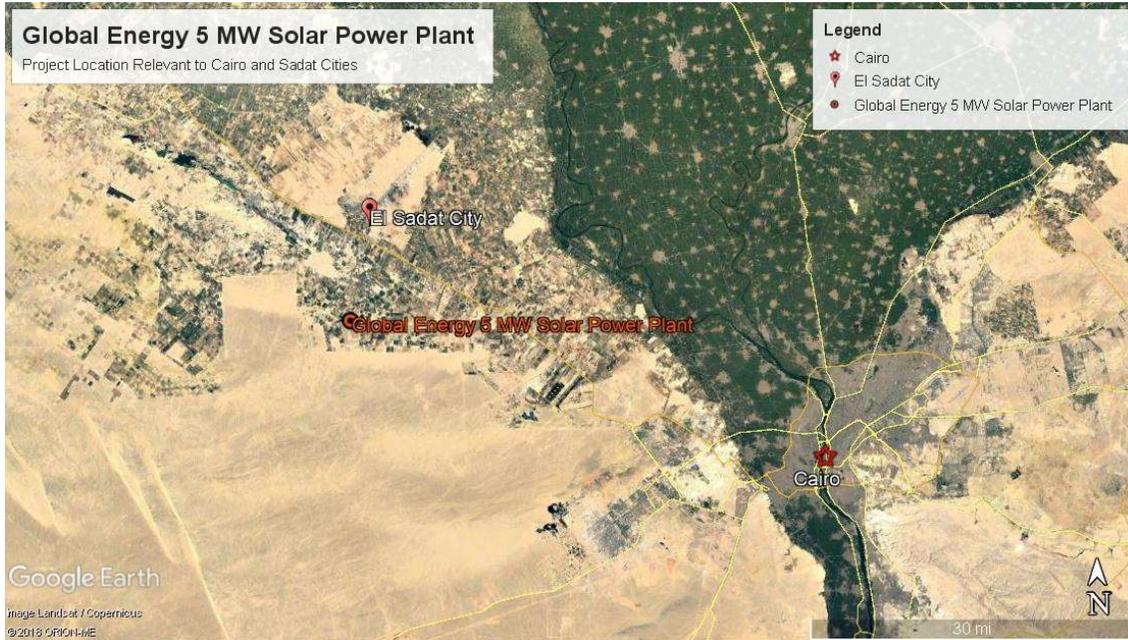
**Project: P202019**

**December 2019**

# 1. PROJECT DESCRIPTION

The EBRD is considering the finance of Global Energy’s (“Global Energy” or the “Project Sponsor”) and TAQA for Solar Energy SAE’s (“TAQA PV” or the “Project Company”) 6 MWp ground mounted solar photovoltaic power plant (the “Project”) located in Giza, Egypt. Global Energy and TAQA PV intend to construct and operate the two power plants as part of a private PPA contract between TAQA PV (Owner/Developer) and Dina Farms (Off-taker/Beneficiary), on land provided by the beneficiary according to a land lease contract for 30 years. The Project will be connected to a substation located approximately 4km away from the PV power plants via already existing overhead transmission lines. The nearest residential area to the site is Sadat City, Menoufia located approximately 15 km north of the site.

Figure 1-1 Proposed Project Location



The Project site occupies a ground area of 14 acres, and is characterized as having a semi-arid desert climate and has a slope in the northwest to southeast direction. An internal access road within Dina Farms’ property is located west of the site. A medium voltage overhead transmission line, approximately 1 km west of the Project site, runs in a south west to north east direction. The site is accessed using internal roads operated and maintained by Dina Farms. Cairo-Alexandria Desert Road is the main access point to Dina Farms and is located 12 km north east of the Project site.

Figure 1-2 Proposed Project Site within Dina Farms



The plot of land allocated for the ground mounted solar power plant is relatively flat ground surface. The site is surrounded by agricultural and desert land to its north, east, south and west (Figure 1-3).

Figure 1-3 Project Site Features



All civil designs shall be approved by a third party where applicable, and shall meet local codes and regulations. Scope of civil works shall be subcontracted to a competent contractor, which entails the following scope:

- Access roads in site for temporary use during construction and permanent access.
- Installation of temporary facilities and laydown areas.
- All earthworks including excavation of cable trenches, backfilling, grading, levelling and drainage.
- Concrete works for container foundations.
- Drainage system for site.

- Ramming posts or pile ramming combined with concrete for mounting structures (depending on consultant verification on pull-out tests).

The construction phase is anticipated to last for a duration of one year and have a workforce of 50 during peak construction.

During operation, the Project is expected to have a workforce of 15 and to supply approximately 40% of the beneficiary's total annual energy consumption.

## 2. PROJECT'S COMPLIANCE WITH LEGAL AND EBRD REQUIREMENTS

Global Energy plans to undertake an Environmental Impact Assessment (EIA) for the proposed Project, and will need to develop an environmental register for the Project, both requirements of Egyptian environmental laws. Global Energy intends to retain an independent environmental consultant/firm to complete the EIA, which is then expected to comply with Egypt's Law 4/1994 on the protection of the environment. As a Category Scoped B Project under Egyptian environmental law, the Project is not required to hold a public consultation.

Global Energy has a documented integrated management system meeting the requirements of ISO 14001 (environmental management system) and OHSAS 18001 (health and safety management system). The management system is currently being implemented and is expected to be recertified by an accredited certifying body in August 2019. A stakeholder engagement plan will be prepared and implemented to ensure internal and external stakeholders have been identified, relevant information is adequately shared with them and their concerns taken into consideration during Project implementation. The stakeholder engagement plan will also enable internal and external stakeholders to file their complaints. Global Energy has a series of policies and codes of conduct including provisions on child and, forced labour, freedom of association, non-discrimination, equal opportunity, wages, benefits and conditions of work. The company has demonstrated their experience in implementing labour management measures to ensure that all contractors onsite adhere to the requirements of Egypt's labour Law 12/2003 and the International Finance Corporation's (IFC) Performance Standards (namely, PS2 – Labor and Working Conditions). An Environmental and Social Action Plan (ESAP) has been prepared to assist Global Energy bring its implementation of the Project into compliance with national laws and regulations, as well as the EBRD's Performance Requirements.

## 3. SUMMARY OF ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

Project Phase	Component	Impacts and Mitigation
<b>Construction</b>	<b>Air</b>	Construction activities may negatively impact the ambient air quality as a result of emissions from machines and equipment, as well as the movement of vehicles and machinery on the desert terrain. Mitigation measures to avoid and/or minimize this potential impact include dust suppression, road compaction and covering materials being transported onsite.
	<b>Noise</b>	Activities that are likely to cause excessive noise during the construction phase include the operation of generators, heavy equipment and ramming equipment. This impact can be mitigated by applying measures such as providing workers with hearing protection and switching off equipment that is not in use.
	<b>Water</b>	The construction phase may see large quantities of groundwater used for domestic and construction purposes (dust suppression). Although this is not likely to affect the supply of groundwater to the surrounding community, mitigation

		measures to be taken include installing water saving fittings and monitoring water consumption.
	<b>Soil</b>	The installation/use of septic tanks, the use of chemicals, fuels and oil, as well as the improper handling of waste during construction may pose a threat to soil quality. Ensuring that septic tanks are regularly inspected, workers are properly trained in handling hazardous materials and designating non-hazardous and hazardous waste storage areas are some of the mitigation measures that can be applied to avoid the risk of soil contamination.
	<b>Fauna and Flora</b>	Although the Project area is not rich in biodiversity, the potential for habitat destruction and disturbance to fauna remains as a result of activities such as minimal vegetation clearance and levelling. Mitigation measures that can be applied include avoiding excessive vegetation clearing and limiting all construction activities to the boundaries of the working area.
	<b>Health and Safety</b>	Injuries during construction may result from collisions with moving equipment, trips and falls, as well as electrical hazards resulting from poor insulation of equipment for example. To avoid such impacts, mitigation measures include checking all electrical cords, cables, etc., applying manufacturer's safety devices and good housekeeping.
	<b>Community Health and Safety</b>	Impacts on the community can mainly be attributed to potential traffic accidents as a result of material/equipment and workforce transport to and from the site. These can be avoided by following traffic rules, training drivers and avoiding the delivery of materials during rush hours.  Other potential impacts to the community may include injuries as a result of trespassing onto the construction site by Dina Farms' workers. Erecting a fence and conducting ID checks at the entrance is an important measure to avoid this potential impact.
	<b>Project Induced In-Migration</b>	The demand for workers during construction may attract non-locals to the site in search for employment opportunities. Failing to employ a significant portion of the workforce from the local community can create resentment towards the Project by locals. Preparing a local employment plan and stakeholder engagement plan may offset this potential impact.
	<b>Child/Forced Labour</b>	Subcontractors may employ children as part of their workforce which is a violation of Egypt's labour law 12/2003. Furthermore, subcontractors may retain wages and IDs from workers in return for work. Therefore, developing an HR Policy to be signed by all parties is key. Other measures to be taken include regular labour inspection checks onsite to ensure no children are employed and that all workers are onsite voluntarily.

	<b>Cultural Heritage</b>	Although the site is not known to contain any significant cultural heritage, construction activities may cause the damage, removal or disturbance of unknown cultural heritage. Preparing a Chance Find Procedure and reporting any chance finds to the Egyptian Authority of Antiquities are important mitigation measures to be implemented.
	<b>Socio-economic</b>	The Project is likely to create employment opportunities (for skilled, semi-skilled and unskilled workers) for the surrounding communities, as well as create a demand for the purchase of local good and supplies. Therefore, the Project is anticipated to have a positive impact on the local communities and economy.
<b>Operation</b>	<b>Soil</b>	Given the absence of a sewer system in the Project area, a septic tank will have to be used which poses a threat to soil quality as a result of improper wastewater management. To address this potential impact, septic tank's capacity shall be at least the 110% of the estimated quantity of sewage/wastewater to be collected and regular inspections of the septic tank should be undertaken.
	<b>Waste</b>	Waste generated during the operation phase may include broken PV panels and potential empty fuel and oil containers. Improper management of this waste can potentially contaminate soil and contribute to illegal dumping practices. Mitigation measures include designated hazardous and non-hazardous waste storage areas and contracting licensed waste disposal service providers.
	<b>Landscape/Visual</b>	The operation of the PV plant is likely to create a visual impact via light reflections from the solar module surfaces. This can be mitigated by considering fencing with privacy slats, earthen berms, or vegetative screening materials and using low visual reflective solar modules with anti-reflective coating (ARC) that reduces reflectance from the solar PV modules.
	<b>Health and Safety</b>	Negative impacts of health and safety hazards on workers during operation are similar to those indicated during the construction phase, except they are expected to be better controlled with a smaller workforce and a Project-specific health and safety management plan
<b>Decommissioning</b>	<p>Decommissioning impacts are expected to be similar to those identified in the construction phase.</p> <p>The Project is planned to operate for a 25 year tenure beyond which it will become the property of the beneficiary, Dina Farms, and continue to operate for an unknown period of time. Given the unknown lifetime of the Project, decommissioning is strongly recommended to follow GIP, especially when handling obsolete solar panels potentially containing hazardous materials.</p>	

## 4. STAKEHOLDER ENGAGEMENT, INFORMATION DISCLOSURE AND CONTACT DETAILS

A Stakeholder Engagement Plan (SEP) will be prepared for the Project in which all affected stakeholders will be identified, including communication methods and the information to be disclosed to each stakeholder. The SEP will also include a process for filing grievances/complaints relating to the Project. A copy of the SEP will be made available on Global Energy's webpage at [www.taqa.com.eg](http://www.taqa.com.eg).

All complaints/grievances relating to the Project can be submitted online via Taqa Arabia's (owner of Global Energy and TAQA PV) webpage at <https://www.taqa.com.eg/contact.html> or via telephone at +20 2796 1494 / 2795 4671.

For further information on the Project, including the ESAP, EIA and SEP, please use the contact details provided below.

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