

**Environmental and Social Review Summary**  
**Feed in Tariff Program – TAQA Solar Reserve S.A.E**

*This Environmental and Social Review Summary (ESRS) is prepared by MIGA staff and disclosed prior to the date on which MIGA’s Board of Directors considers the proposed issuance of a Contract of Guarantee. Its purpose is to enhance the transparency of MIGA’s activities. This document should not be construed as presuming the outcome of the decision by MIGA’s Board of Directors. Board dates are estimates only.*

*Any documentation that is attached to this ESRS has been prepared by the project sponsor, and authorization has been given for public release. MIGA has reviewed the attached documentation as provided by the applicant, and considers it of adequate quality to be released to the public, but does not endorse the content.*

Country:	Arab Republic of Egypt
Sector:	Energy and Extractives
Project Enterprise:	TAQA Solar Reserve S.A.E
Environmental Category:	B
Date ESRS Disclosed:	August 4, 2017
Status:	Due Diligence

**A. Project Description**

ib vogt GmbH (referred to as ‘ib vogt’), is seeking MIGA coverage of the commercial debt tranche on a solar photovoltaic (PV) plant developed by the company TAQA Solar Reserve S.A.E (Taqa 50), hereafter also referred to as the ‘Project Enterprise’. Taqa 50 is a Special Purpose Vehicle (SPV) company owned by a consortium constituted of Infinity Solar Energy SAE and ib vogt (the sponsors). The sponsors will be responsible for managing construction and operational aspects of a 50 Mega Watt alternative current (MW<sub>AC</sub>) solar PV plant located in the Benban solar complex in the Aswan Province of Egypt (the project). ib vogt was selected as the Engineering Procurement and Construction (EPC) and Operations and Maintenance (O&M) contractor for the project.

The project forms part of the Egyptian government’s feed-in-tariff (FiT) scheme aimed at diversifying and securing Egypt’s electricity supply. The European Bank for Reconstruction and Development (EBRD) is also providing long term senior debt financing to the project.

In addition to Taqa 50, ib vogt is seeking MIGA coverage of the commercial debt tranche on two additional solar plants: MMID 30; and Phoenix Power 1, which is also seeking International

Finance Cooperation (IFC) finance. All three projects are within the Benban solar complex and each is covered under a separate ESRS.

Taqa 50 is allocated to plot 20-3 (97 hectares). As mentioned above, the plant will have an alternating current capacity of 50 MW<sub>AC</sub> and peak direct current capacity of 64 MW<sub>DCP</sub>, and will be linked to substation 3 on the eastern corner of the Benban solar complex via an underground 22 kilovolt (kV) transmission line following the internal routes right-of-way (RoW) installed by Egypt Electricity Transmission Company (EETC).

The Benban solar complex comprises a 37-square kilometer (km<sup>2</sup>) area allocated to Egypt's New and Renewable Energy Agency (NREA) located in the Western Desert, 15 km west of the River Nile and approximately 1 km west of the Aswan – Luxor highway. The complex is approximately 650 km from Cairo. With the exception of the narrow and densely populated Nile Valley with its intensive agriculture, the area is desert land, largely unused and unpopulated. The area is mainly flat, with sand and gravel dunes, and with no notable natural vegetation and no human activities. The nearest villages are Benban village, about 12 km east and Fares village about 25 km northeast of the Benban solar complex, with 26,200 and 11,000 inhabitants respectively. The nearest cities are Aswan, 40 km to the south and Luxor 140 km to the north.

The Benban solar complex is sub-divided into 39 plots each allowing for a solar plant of up to 50 MW with a total capacity for the entire site of up to 1.8 Gigawatts (GW). All the 39 plots are greenfield, and none have begun construction. Three developers were qualified from FiT round 1; one of the companies (consortium between ib vogt and infinity solar) has finished ramming the posts and started installing the trackers. The complex will be managed by a Facilities Management Company (FMC), currently under procurement. The FMC will be collectively appointed by NREA and the EETC in conjunction with the Benban Developers Association (BDA). In addition, international development finance institutions funding some of the projects within the complex (e.g. IFC and EBRD) have also provided advice during the procurement of the FMC. Management of the Benban solar complex is further explained under Performance Standard (PS) 1.

Power evacuation will be the responsibility of EETC. Power will be evacuated from the new substations via an existing 220 kV high voltage line, 12 km east of the Benban solar complex. In addition, EETC is currently conducting a grid connection study to assess other alternatives to evacuate generated capacity. Options being considered at present include: (i) upgrading an existing high voltage line; and (ii) constructing a 180 km double circuit 500 kV transmission line north of the site. The new 500 kV line would be considered an Associated Facility to the complex. Funding and engineering studies are underway and once complete, EETC will also tender for an Environmental and Social Impact Assessment (ESIA) for this transmission line. The Project Enterprise through the BDA will make adequate efforts to ensure that E&S issues and risks identified (in particular those related to biodiversity and issues affecting communities) are managed in line with the PS.

As mentioned above, ib vogt is the EPC and O&M contractor for the project. ib vogt was established in 2002 and has completed over 710 MWp power plants and operates over 210 MWp power plants around the world.

Project construction will last approximately 12 months and the plant is designed for a 25-year operational lifetime. The solar PV panel arrays will comprise polycrystalline solar PV modules in mounted on single-axis tracker racking structures. The design also includes central inverter and transformer stations from which power is evacuated to their designated substations. Ancillary infrastructure includes access roads, storage, laydown areas and office buildings. The majority of the construction materials and equipment will be shipped to El Dekheila port and transported via the Alex-Aswan/ Giza desert road and Axour-Aswan-Benban road via trucks. The project plot is in a greenfield site and in pre-construction phase. Construction is anticipated to start March 2018.

## **B. Environmental and Social Categorization**

The project is Category B under MIGA's Policy on Environmental and Social Sustainability (2013) because the E&S impacts associated with the project are limited, generally project-specific and readily addressed through mitigation measures. Key risks and impacts include water consumption, dust and air emissions, noise occupational health and safety (OHS), community safety.

The project forms part of a larger development, and as such, there are potential cumulative environmental and social impacts such as OHS, community safety, water consumption, dust, waste associated with the construction, and to a lesser degree the operational and decommissioning phases, which need to be managed in a coherent and coordinated manner. In order to address the potential cumulative impacts, the BDA was formed. EETC together with NREA and in coordination with the BDA, will appoint a FMC to manage these common facilities and issues and be responsible for the development and implementation of the Environmental Social Health and Safety (ESHS) Management System for the Benban solar complex. This approach will assist in ensuring that ESHS risks are managed consistently by the developers, and that there is a well-managed and coordinated response to cumulative impacts.

## **C. Applicable Standards**

While all Performance Standards are applicable to this project, MIGA's environmental and social due diligence indicates that the project will have impacts which must be managed in a manner consistent with the following Performance Standards:

- PS1: Assessment and Management of Environmental and Social Risks and Impacts
- PS2: Labor and Working Conditions
- PS3: Resource Efficiency and Pollution Prevention
- PS4: Community Health, Safety and Security

The Benban solar complex land was previously open desert. It is now owned by NREA, and will be leased to the developers for a 25-year period. There will be no displacement (physical or economic) necessary for the Project, thus PS5 on Land Acquisition and Involuntary Resettlement is not applicable. The area comprises desert with minimal vegetation and surveys have not identified any features or species which would trigger PS6 for Biodiversity Conservation and Sustainable Management of Living Natural Resources. There are no Indigenous Peoples in the project area, and therefore PS7 on Indigenous Peoples is not applicable. The studies as part of the ESIA did not reveal cultural heritage, therefore PS8 on Cultural Heritage is not applicable. However, the project will develop a chance finds procedure in case of the identification of cultural/archeological resources in the area.

World Bank Group (WBG) Environmental Health and Safety (EHS) General Guidelines and Guidelines for Electrical Power Transmission and Distribution also apply to this project.

#### **D. Key Documents and Scope of MIGA Review**

The following documents were reviewed by MIGA:

- Environmental and Social Compliance Report – Infinity/ ib vogt portfolio – 80 MW<sub>AC</sub> Solar PV Projects - Benban, Egypt (OST Energy, May 2017)
- Environmental and Social Action Plan – Infinity - ib vogt – 80 MW<sub>AC</sub> Solar PV Projects - Benban, Egypt (OST Energy, May 2017)
- Strategic Environmental and Social Assessment – Benban 1.8 GW photovoltaic solar park (NREA), Egypt (Eco Con Serv, February 2016)
- Environmental and Social Impact Assessment for 30 MW PV Power Plant Benban Solar Park, Aswan Governorate, Egypt (Eco Con Serv, April 2017)
- Environmental and Social Management System documents: (i) E&S policy (July 2016); (ii) Environmental and Social Management Plan (January 2017); (iii) Identification of Risks and Impacts (March 2017); (iv) Management Programs (March 2017); (v) Organizational Capacity and Competency (March 2017); (vi) External Communications and Worker’s Grievance Mechanism (March 2017); (vii) Monitoring and Review (March 2017); (viii) Integrated Management System Procedure (March 2017); (ix) Chance Management Procedure (March 2017); Occupational Health and Safety Manual (2016)
- EPC related documents: (i) Human Resources, Environmental and Social Sustainability Policy (January 2017); (ii) Site Induction Booklet template (July 2016) (iii) Solar Farm induction; (iv) Work Health Safety and Environment (WHSE) Principal Contractor Plan (July 2016)

MIGA’s E&S due diligence of the project consisted of: (i) review of client’s E&S and independent lender’s E&S advisor documentation, (ii) discussions with the client to assess its capacity to manage ESHS risks and compliance with the Egyptian regulatory requirements and MIGA’s PSS; (iii) discussions with the EBRD regarding their site visit (May 2017), project specific details and an overview of the Benban solar complex.

## **E. Key Issues and Mitigation**

### PS1: Assessment and Management of Environmental and Social Risks and Impacts

*Environmental and Social Assessment and Management Systems:* The sponsors corporate management systems follow the International Standards Organization (ISO) 14001 – Environmental Management System and 9001 – Quality Management System requirements and Occupational Health and Safety Assessment Series (OHSAS) 18001. Elements of the system will be incorporated at the project level Environmental and Social Management System (ESMS).

An ESMS framework for the project was developed which includes but is not limited to the following: E&S Policy; Identification of Risks and Impacts; Management Programs; Organizational Capacity and Competency, Monitoring and Review, Integrated Management System Procedure (contains hazard identification and risk assessment procedure) and Chance Find Procedure. The ESMS will need to be revised and updated to: (i) include more detailed plans and procedures; (ii) align with the FMC's ESHS Management System (including responsibilities for interface with the FMC and implementation of FMC management plans) and (iii) ensure consistency between Project Enterprise's practices and MIGA's PSs and EBRD's Performance Requirements (PR) (ESAP item # 1).

The EPC contract is a key tool for ensuring contractors' compliance with the ESHS requirements. The contract was reviewed and includes specific requirements to comply with IFC PS. ib vogt has been chosen for both the EPC and O&M contractor which will help facilitate the transition from EPC to O&M which should minimize risks in the operational phase.

*Identification of Risks and Impacts:* A Strategic Environmental and Social Assessment (SESA) for the Benban solar complex was prepared for NREA with funding from EBRD and in consultation with IFC with the objective of providing an overarching assessment of the E&S impacts of the Benban development. The SESA considered cumulative impacts with respect to the additional impacts expected beyond the development of a single solar power plant with individual developers responsible for defining and implementing site specific mitigations/recommendations as appropriate within their environmental management plans. Due to the development of the SESA, the individual projects within the solar park were categorized as requiring an Environmental Screening Form B (abbreviated EIA) by the Egyptian Environmental Affairs Agency (EEAA). The SESA was used as the basis for the Form B preparation. This resulted in a more consistent approach at the individual project level for the Form B EIA preparation, and reduced the need for, and cost of, additional baselines. It also removed the need for a project-specific consultation process.

Form B application was submitted by a different developer under FiT 1 and was approved by the EEAA, this approval remains applicable for round 2. A more comprehensive EIA was prepared for plot 45-2/ MMID 30 project which covers the construction, operation and decommissioning phases and includes an Environmental and Social Management Plan (ESMP). As both Taqa 50 and MMID 30 are under joint development by the sponsors, the mitigation measures, requirements and associated ESMP are considered applicable to both plots. The ESMP was revised by the Project

Enterprise and an outline of management plans covering the following topics was included: waste, water, local hiring, population influx, stakeholder engagement, security, workers' code of conduct, training and regulations, and OHS. The ESMP will be revised and updated to provide more detailed, site-specific plans and to be aligned with the FMC's ESMP and with MIGA's PS, WBG EHS Guidelines, SESA commitments and permit requirements (ESAP item #2).

*Cumulative Impacts:* The SESA concluded that the ESHS risks from individual solar developments at the Benban solar complex could be adequately managed through application of standard mitigation practices, but the cumulative impacts from several developments advancing in the same area at the same time could pose potential significant challenges and risks related primarily to traffic and transportation, OHS, accommodation, labor management, waste management, security and the management of stakeholder expectations from nearby local communities. The SESA also concluded that to address these common issues, a coordinated approach was needed. It further noted opportunities for positive impacts related to engagement with the local communities and community investment efforts if carried out strategically and in a coordinated manner.

As such, the BDA was created in 2016 and reactivated in February 2017 to coordinate the various developers' responses with regards to the management of common or shared facilities, activities or issues across the entire Benban solar complex. A representative of the Project Enterprise is a member of the BDA.

Under an amendment to the Cost Sharing Agreement between the EETC, NREA and the BDA, a FMC will be appointed by EETC and NREA on behalf of the developers to manage cross cutting construction and operation activities for the entire Benban solar complex. These activities include: managing labor and workers' strategy which includes sourcing workers, establishing a common set of standards on employment such as wages and benefits among others, water and wastewater services, waste management services, logistics and security services, stakeholder engagement and worker accommodation and community investment. This approach will ensure that ESHS risks are managed consistently, and there is a coordinated response to cumulative issues. The FMC will also be responsible for the development and implementation of an overarching ESHS management plan. The FMC will be contractually obligated to provide construction and operation services in line with MIGA/IFC PS, EBRD PR, and European Investment Bank (EIB) E&S Standards.

The FMC will also provide other services to all developers (whether they are in the BDA or not) during construction, including EHS management, traffic management, community stakeholder engagement and grievance management and waste management. The Project Enterprise will coordinate with the FMC to comply with all required items outlined in the SESA as "common issues".

*Management Programs:* As mentioned above, an ESMP was outlined in the comprehensive EIA. In general, the ESMP provides an adequate framework for the E&S management of the project but needs to be revised to provide more detailed, site-specific plans and to align with FMC's ESHS MP and MIGA's PS, WBG EHS Guidelines.

Prior to the start of construction ib vogt, as the EPC contractor will implement a Construction Environmental Management Plan (CEMP), which will be developed under the overarching principles of the project ESMS and in line with FMC's ESHS MP and MIGA's PS, WBG EHS Guidelines (ESAP item #3).

Workers are to be made aware of the requirements, measures, and protocols stipulated within the: (i) CEMP during construction and (ii) ESMP during operations through induction training and a workers' manual that is translated into Arabic. The Project Enterprise must also ensure that all EHS personnel are competent to carry out their duties through the hiring and selection process, or, where necessary, arrange for suitable training to be undertaken to achieve this level of competency before construction starts.

*Organizational Capacity and Competency:* The ESMS includes an organizational capacity and competency document which provides a description of the organizational responsibilities. The Project Enterprise will ensure that at a minimum, the E&S team will consist of a suitably qualified EHS manager as well as a site EHS officer supported by additional EHS staff (as required) appointed before the start of construction to manage the risks identified and implement the project-specific ESMS. (ESAP item #4). In addition, ib vogt as the EPC contractor will appoint an EHS focal person on site, who among others duties will liaise closely with the FMC to coordinate all common issues needed between the Project and the Benban solar complex

*Emergency Preparedness and Response:* A comprehensive Emergency Response Plan (ERP) has been developed. The ERP will be updated to include project specific detail (locations of emergency equipment, responsible personnel) and aligned with the Emergency Preparedness and Response Plan (EPRP) for the Benban Solar Complex (ESAP item #2).

*Monitoring and Review:* The ESMS includes a Monitoring and Review procedure for the project which specifies various monitoring activities related to health and safety, emergency preparedness and accident assessment, environmental, social health and safety performance. ib vogt's Principal Contractor Plan specifies weekly and monthly site checks reviewing the site's safety, quality and environment systems. The Monitoring and Review procedure will be updated to include clearly defined roles and responsibilities, compliance with Egyptian legislation and MIGA's PS and WBG EHS guidelines. MIGA will require the Project Enterprise to submit annual monitoring reports (AMR) containing relevant E&S information throughout the guarantee period.

*Grievance Mechanisms:* The FMC will develop a community grievance mechanism for the Benban solar complex in alignment with PS1, and will be responsible for responding to any grievances which are raised in relation to the overall site or individual developers. The Project Enterprise will develop a community grievance mechanism at the project level which will include details of how it will record and respond to any grievances identified by FMC as being caused by the activities of the project, or of its sub-contractors. All responses to grievances will be processed by the FMC to ensure a consistent approach to stakeholder communication from the whole complex. The community grievance mechanism will be created prior to the start of construction to ensure that the developers can respond to any stakeholder issues reported to FMC at any stage in the project implementation.

## PS2: Labor and Working Conditions

The project is expected to employ 250 workers during peak construction and 20 during operations. The recruitment of workers will comply with the recruitment procedures to be developed by the FMC, which will seek to source jobs locally, before recruiting from further afield in Egypt. The FMC may establish offices in Benban and Fares to channel all local labor sub-contracting for the various projects.

*Human Resources Policies and Procedures:* Taqa 50 will develop a project-specific human resources (HR) policy and procedures that complies with PS2 and will ensure that contractors align their HR policies and procedures with the Project Enterprise's HR policy and procedures and with FMC's Labor and Working Conditions Strategy and Employment Plan (LWCSEP) (ESAP item #5). The LWCSEP will include: (i) the setting of common standards for labor and working conditions; (ii) a code of conduct for workers; (iii) assessment of the local labor market; (iv) worker influx strategy and (v) monitoring plan during labor sourcing. The LWCSEP will be shared with the Ministry of Labor and International Labour Organization (ILO) representatives in Egypt for consultation and approval. This approach will be extended to sub-contractors who will also be responsible for hiring workers.

A training plan will also be put in place by the Project Enterprise for employees and contractors. Induction training on the HR policy and procedures and basic safety awareness training will be provided to all newly hired workers. Other types of technical skills training will be identified for staff on an as-need basis.

*Working Conditions and Terms of Employment:* The project's HR policies and procedures will stipulate the terms of employment (wages and benefits, hours of work, overtime arrangements and overtime compensation, annual and sick leave, maternity and paternity leave, vacation and holiday, health insurance and end of service benefits) and will also include provisions on restrictions to child labor and prevention of forced labor as well as commitment to non-discrimination and equal opportunities for employees and contractors and will be shared with all new hires.

Workers employed for the project during construction will be transported from the local communities and Aswan or accommodated in FMC managed worker accommodation. The worker's accommodation will follow the IFC/ EBRD workers' accommodation guidelines (ESAP item #6).

*Worker's Organizations:* In line with PS2, the project's HR policies and procedures will not impede workers from freedom of association and collective bargaining. Workers will be able to organize among themselves and will not be intimidated, punished or discriminated against for doing so. Workers will be allowed to join unions or otherwise allow collective bargaining. The project will communicate with the workers' organizations and their representatives.



*Non-Discrimination and Equal Opportunity:* The sponsors are committed to non-discrimination based on the age, gender, sexual orientation, health, race, nationality, political opinions or religious beliefs of its counterparties. The requirements of non-discrimination and equal opportunities will be extended to all contractors and sub-contractors in their contractual obligations.

*Grievance Mechanism:* A workers' grievance mechanism has been developed and provides adequate detail of process requirements (including response timeframes to grievances), roles and responsibilities and steps to ensure appropriate management of worker grievances. The grievance mechanism will need to be updated to include project specific contact details, handling of anonymous complaints and reference to FMC's grievance mechanism, where relevant. The grievance mechanism will be made available to all project staff including contractors and sub-contractors.

*Occupational Health and Safety:* Key OHS risks for a PV solar project include slips and falls, potential hazards from on-site moving machinery, heavy load lifting, exposure to electric shocks and burns and safety issues related to PV module assembly. Considering the hot and arid project location, construction workers might be at risk of dehydration, heat exhaustion and heat stroke if not properly hydrated.

Prior to the start of construction activities, the Project Enterprise will ensure that it acts as the EPC contractor develops project OHS procedures (ESAP item #7). These procedures will address the following issues: hazard identification and assessment; construction site safety (access control, clear demarcation of areas and provision of safety information to visitors); specific procedures for hazardous works; workers' safety and training plan; personal protective equipment needs; site supervision and audit procedures; incident intervention measures and reporting. The procedure will be designed to be specific to the PV solar sector (in terms of industry-specific hazards) and the project. The OHS procedure will also link with the project's ERP which will include fire risk assessment and control systems, fire alarm systems and drills, emergency preparedness and planning. The project's OHS performance will be tracked, recorded and reported to the Project Enterprise on a regular basis. OHS procedures will be revised and updated for operations where the risk is reduced.

*Workers Engaged by Third Parties:* the Project Enterprise will make reasonable efforts to ascertain that the third parties who engage these workers are reputable and legitimate enterprises and have an appropriate ESMS that will allow them to operate in a manner consistent with the requirements of MIGA's PS and will establish procedures for managing and monitoring the performance of such third-party employees in relation to MIGA's PS as well as incorporate these requirements in contractual agreements, as identified in ESAP item #8.

*Supply Chain:* The Project Enterprise will conduct a supply chain assessment of the nominated primary PV supplier to identify key E&S risks/impacts and ensure the supplier complies with the principles of MIGA's PS to appropriately manage these risks. Consideration in the assessment should be given to confirming the adequacy of the manufacturing facility's management of hazardous material storage, waste storage/disposal, compliance with working conditions and

occupational and community health and safety requirements to demonstrate that the project's suppliers are complying with MIGA's PS and EHS Guidelines (ESAP item #9). The Project Enterprise will include a clause to comply to MIGA PS requirements in main supplier contracts, as applicable.

### PS3: Resource Efficiency and Pollution Prevention

*Resource Efficiency:* Resource consumption of the project is expected to be minimal, with water as the main resource utilized during construction for dust suppression, concrete production, and domestic usage. During operations, the main water use is typically related to cleaning of the PV modules and domestic usage. However, the project will aim to employ dry-cleaning PV panel cleaning methods which significantly reduces the consumption of water during operations. Water supply options are currently being assessed. Water will either be trucked to site, sourced from the Nile or abstracted from boreholes around the site. Each developer is required to conduct a resource needs assessment and FMC will lead and coordinate the water supply in collaboration with the BDA.

*Water Consumption:* The estimated water consumption during the construction phase is expected to be approximately 5000 m<sup>3</sup> per year for the project civil activities (concrete production, equipment cleaning, dust suppression). During operations, water consumption is estimated to be 2000 m<sup>3</sup>/year for general sanitation use for the project. As previously specified, dry cleaning technology will be used to clean the PV panels alternated with wet cleaning every quarter. A water management plan will be developed for the project following FMC's requirements and international standards, and will include water quantity estimates and reporting of water use (ESAP item #10).

*Greenhouse Gases:* Greenhouse gas emissions from the project during construction are expected to be predominantly associated with the use of fuels such for generators, transport, on-site equipment, and machinery. Although the emissions have not been calculated, these are expected to be low and significantly less than 25,000 tonnes CO<sub>2</sub>e per year. Based on the International Energy Agency (IEA) data for the Egyptian National Grid, lifecycle project emissions savings were estimated to be 1,219,082 tonnes CO<sub>2</sub>e over the lifetime for the combined capacity of 80 MW<sub>AC</sub> of the two ib vogt projects.

*Wastes:* Solid waste generated during construction mainly consists of municipal and construction wastes that will be collected by a third party contractor to be disposed of in designated landfill sites. The overall volumes of both solid and hazardous waste generated by the project during construction are expected to be low. It is anticipated that solid waste will comprise paper, wood, plastic, scrap metals, and glass, and hazardous waste will be likely to comprise fuel, oils, lubricants, hydraulic/insulating fluids and batteries, tires, metal drums and empty chemical containers. A limited number of waste PV modules are expected to require disposal during the construction phase. During operations, waste generated will be largely limited to domestic waste, and waste generated from maintenance. These waste streams will be segregated as per the Waste Management Plan to be developed for construction and operations. Waste management procedures will be aligned with

those of the FMC and requirements of relevant sections of the applicable WBG EHS Guidelines. When the plant is decommissioned, the priority option of disposal of the PV panels will be through recycling.

*Wastewater Treatment:* Wastewater from sanitary facilities will be stored in suitable septic tanks and transported off-site. The FMC will have the overall responsibility for the management, collection and disposal contracts for sewage and other wastewater from the Benban solar complex. Management of wastewater will be addressed in the waste management plan.

*Pollution Prevention:* During construction of the project the power needs will be met by diesel generators. Generators will locally impact air quality and require fuel management and containment. Another aspect that can impact air quality is dust generation during construction. These impacts, however, will be short in duration and temporary. During operations electricity, is planned to be back-fed from the grid with a generator on standby. The Project Enterprise will put in place plans and procedures that manage pollution related aspects of the project in line with the requirements of relevant sections of the applicable WBG EHS Guidelines (ESAP item #11). Aspects should cover, among others air quality/ dust, spills, occupational noise, among others.

#### PS4: Community Health, Safety and Security

The project is located on desert land which is owned by the NREA and project access is along the newly constructed NREA roads from the local public highway. There will be no road or land impacts on the local villages.

*Community Health and Safety:* The FMC will develop a community health and safety study and population influx plan as per the SESA requirements to address the influx of construction workers coming into the Benban area for the project development, and their impact on the community at large including the risk of infectious diseases. ib vogt, as the EPC contractor will develop a worker's code of conduct aligned with FMC's which will be implemented throughout the duration of the construction of the project. The code of conduct will apply to all sub-contractors to ensure they maintain high standards within the community, and meet the requirements of PS4.

As noted in the SESA, during peak construction there will be an estimated 1,400 vehicles/day accessing the various plots within the Benban solar complex, which could present a potentially significant risk to the workers and personnel on site, and the local community along the main and access roads unless it is well managed.

Project traffic will need to be coordinated with the BDA and FMC and aligned with the FMC's traffic management plan to ensure that risks to workers and community members are mitigated. As such, a project specific traffic management plan, which aligns with the FMC's overarching traffic management plan will be prepared as identified in ESAP item #12.

*Security:* The FMC will be responsible for the security of the Benban solar complex and will develop an overarching security management plan, however a project-specific security risk assessment and security management plan that captures key elements of PS 4 that aligns with FMC’s security management plan is required for both construction and operations (ESAP item # 13). The security management plan will include the following: hiring of security personnel (making reasonable inquiries to ensure that those providing security are not implicated in past abuses), rules of conduct, training in the use of force and appropriate conduct toward workers and affected communities, equipping and monitoring.

## **F. Environmental Permitting Process and Community Engagement**

*Environmental Permitting Process:* The EEAA is the primary regulatory body responsible for environmental matters in Egypt and operates in accordance with the Law of Protection of the Environment (Law No. 4, 1994) and its executive regulations established by Prime Minister Decree no. 338/1995. The national law for environment requires that an EIA be completed and submitted to the competent administrative authorities (CAA) which in the case of PV power plants is NREA.

The EEAA categorizes projects in accordance with the predicted environmental impacts in the form of:

- Category A: projects with minor environmental impacts
- Category B: projects which may have substantial impacts and require a scoped EIA
- Category C: projects which require a full EIA due to their potential severe impacts.

PV power plants are generally categorized as B (requiring an abbreviated environmental approval process), however EEAA has the authority, depending on the scale of the project to request a more detailed assessment and to classify it as category C (requiring an ESIA and Public Consultation meeting). In consultation with EEAA, NREA reached an agreement with EEAA to conduct an overall SESA study for the Benban solar complex that meets the requirements of C category projects. All individual power plants were considered components under the SESA and required only submission to the EEAA of Form B which is an abbreviated ESIA with project/plot specific information which could be completed either by the developer or their consultants and without the need for additional public consultation. The approval of the Form B, together with the SESA approval, constitute the Environmental Permit required for the project.

*Stakeholder Engagement:* Stakeholder engagement activities were carried out as part of the development of the SESA. Moving forward, all stakeholder engagement will be managed through the FMC and will build on the engagement undertaken as part of the SESA which included meetings with local villagers, both individually and as a group. FMC will develop a Stakeholder Engagement Plan (SEP) for the Benban Solar Complex in order to coordinate efforts and resources. At the project level a stakeholder strategy is required to outline how the project will interact and implement the FMC’s SEP.

A number of potential opportunities for community development were identified in the SESA including training (for local employment), health services (improving health units), and infrastructure (including schools and roads). Opportunities for community investment cannot all be addressed by one investor/project and are more effectively addressed through collaborative efforts of the different developers. The Project Enterprise will develop a Corporate Social Responsibility (CSR) plan in line with the strategic community investment efforts of the BDA through the FMC to ensure a coordinated effort on the part of the Benban solar complex.

### **G. Availability of Documentation**

The documentation listed below is available electronically as PDF attachments to this ESRS at [www.miga.org](http://www.miga.org).

- Environmental and Social Impact Assessment for 30 MW PV Power Plant Benban Solar Park, Aswan Governorate, Egypt (Eco Con Serv, April 2017)
- Strategic Environmental and Social Assessment – Benban 1.8 GW photovoltaic solar park (NREA), Egypt (Eco Con Serv, February 2016)
- Environmental and Social Action Plan

The documentation is also available for viewing at the following locations:

ib vogt GmbH  
Helmholtzstr. 2-9  
10587 Berlin  
Germany

For additional information, please contact:

- Beate Kampmann, [Beate.Kampmann@ibvogt.com](mailto:Beate.Kampmann@ibvogt.com)
- Daniel Ojeda, [Daniel.Ojeda@ibvogt.com](mailto:Daniel.Ojeda@ibvogt.com)

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*MIGA supports its clients (as defined in MIGA Policy on Environmental and Social Sustainability) in addressing environmental and social issues arising from their business activities by requiring them to set up and administer appropriate grievance mechanisms and/or procedures to address complaints from Affected Communities.*

*In addition, Affected Communities have unrestricted access to the Compliance Advisor/Ombudsman (CAO), the independent accountability mechanism for MIGA. The CAO is mandated to address complaints from people affected by MIGA-guaranteed business activities in a manner that is fair, objective, and constructive, with the goal of improving environmental and social project outcomes and fostering greater public accountability of MIGA.*

*Independent of MIGA management and reporting directly to the World Bank Group President, the CAO works to resolve complaints using a flexible, problem-solving approach through its dispute*

*resolution arm and oversees project-level audits of MIGA's environmental and social performance through its compliance arm.*

*Complaints may relate to any aspect of MIGA-guaranteed business activities that is within the mandate of the CAO. They can be made by any individual, group, community, entity, or other party affected or likely to be affected by the environmental or social impacts of a MIGA-guaranteed business activity. Complaints can be submitted to the CAO in writing to the address below:*

*Compliance Advisor/Ombudsman  
International Finance Corporation  
2121 Pennsylvania Avenue NW  
Room F11K-232  
Washington, DC 20433 USA  
Tel: 1 202 458 1973  
Fax: 1 202 522 7400  
E-mail: [cao-compliance@ifc.org](mailto:cao-compliance@ifc.org)*