

# 200 MW Photovoltaic Power Project Kom Ombo – Aswan Arab Republic of Egypt



## Environmental and Social Impact Assessment (ESIA) Report – Non-Technical Summary (NTS)

Prepared for:



February 2020

## DOCUMENT INFORMATION

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5Cs PROJECT DIRECTOR	Ken Wade

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## LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
AC	Alternating Current
AFD	Agence Française de Développement
AFDB	African Development Bank Group
CESMP	Construction Environmental & Social Management Plan
CSP	Concentrated Solar Power
DC	Direct Current
EBRD	European Bank for Reconstruction and Development
EEAA	Egyptian Environmental Affairs Agency
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
IFIs	International Financial Institutions
ISES to 2035	Integrated Sustainable Energy Strategy to 2035
NREA	New and Renewable Energy Authority
OESMP	Operational Environmental and Social Management Plan
PEA	Preliminary Environmental Assessment
PPA	Power Purchase Agreement
PV	Photovoltaic
5 Capitals	5 Capitals Environmental & Management Consultancy

# 1 OVERVIEW OF THE PROJECT

This document is the Environmental and Social Impact Assessment (ESIA) Non-Technical Summary for the Kom Ombo 200MW PV project (the Project). The Project is located in Kom Ombo town in the Aswan Governorate of the Arab Republic of Egypt.

The ESIA report has been prepared in accordance with Egyptian environmental regulations and the European Bank for Reconstruction and Development (EBRD) Environmental and Social Policy (2014) and Performance Requirements and applicable European environmental standards.

## Key Project Information

**Table 1-1 Key Project Information**

<b>PROJECT TITLE</b>	Kom Ombo 200 MW Photovoltaic (PV) Power Project
<b>PROJECT OWNER</b>	ACWA Power
<b>PROJECT COMPANY</b>	ACWA Kom Ombo for Energy
<b>EPC CONTRACTOR</b>	Mahindra Susten
<b>ENVIRONMENTAL CONSULTANTS</b>	5 Capitals Environmental and Management Consulting (5 Capitals) (Lead Consultants)
	Environmental and Development Group (EDG) (Local Consultants)
<b>ACWA POWER POINT OF CONTACT</b>	Ayman Fayek Email: AFayek@acwapower.com Telephone: +20 1001900890, Office +2 02 23225500

**Goals & Objectives:** This Project will contribute towards Egypt's Integrated Sustainable Energy Strategy to 2035 (ISES to 2035), released by the Ministry of Electricity and Renewable Energy in 2015 to develop the energy sector in Egypt. One of the main outcomes of the strategy was the need to diversify the energy resources and increase the share of renewables by 20% in 2022 and 42% in 2035 with wind providing 14%, hydro power 2%, Concentrated Solar Power (CSP) 3% and Photovoltaic (PV) 22%. Part of this share will be achieved through the implementation of the Kom Ombo 200 MW PV Project. Other benefits include:

- Socio-economic benefits: The project is expected to create employment opportunities during the construction and operational phases; and
- Sustainability: The operation of the solar plant is a proactive measure towards a low carbon transition for Egypt's economy harnessing the abundant solar radiation in the country. This project will reduce Egypt's dependency on fossil fuel generated power and will reduce atmospheric pollution; in comparison to other power generation technologies in the current energy mix of Egypt.

The objectives of this ESIA in relation to this Project include the following:

- Assessment of baseline conditions prior to the development of the Project through review of available data and conducting surveys;

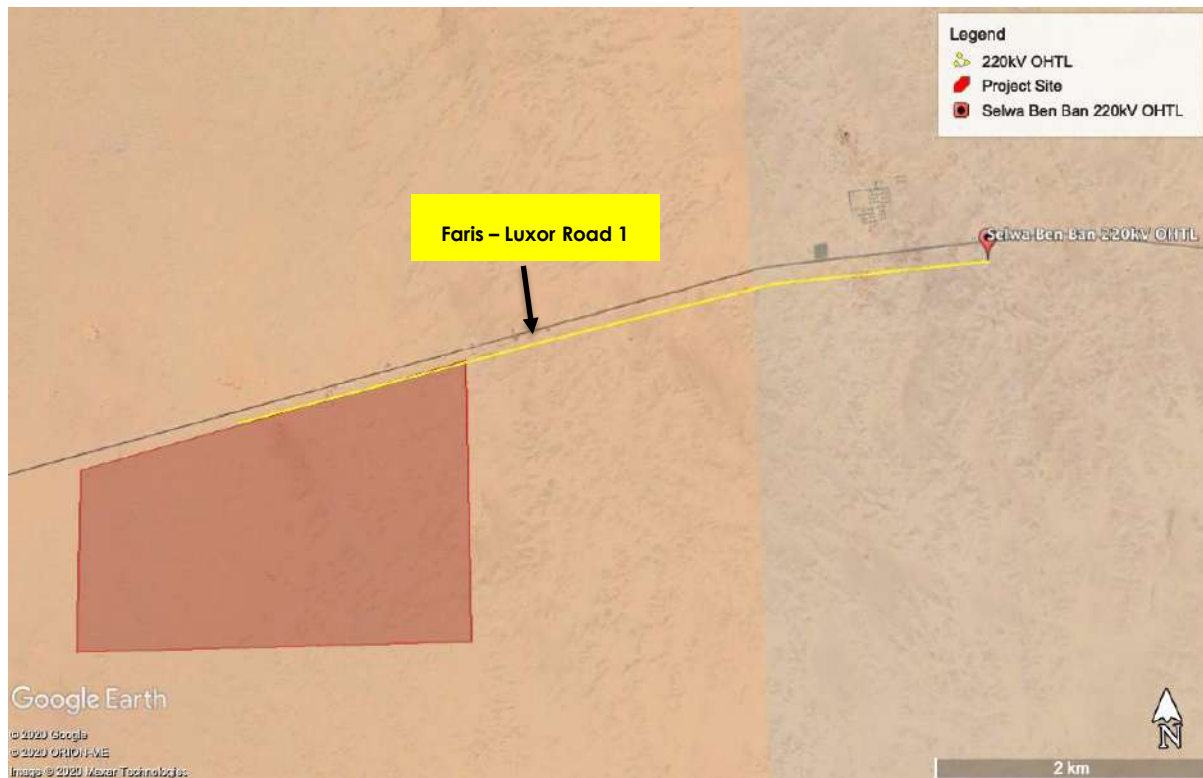
- Assessment of the project's environmental & social impacts for the construction and operational phases;
- Review of compliance obligations, including applicable Egyptian regulations and international regulations & standards as well as international lender requirements.
- To engage with key stakeholders to disclose Project information, study outcomes, gain lay knowledge about the local environmental & social context and seek feedback
- Determination of applicable mitigation and management measures to be implemented in order to avoid or minimise potential impacts.
- Prepare a framework from which the construction phase and operational phase respective management systems and plans can be developed and implemented.

**Developer:** This Project was launched by the New and Renewable Energy Authority (NREA) with support from Agence Française de Développement (AFD). ACWA Power has been awarded the contract to develop the Kom Ombo 200MW PV project. The Project award includes the design, engineering, permitting, procurement, construction, commissioning, performance testing, operation and maintenance of the plant. This solar PV Power Plant is expected to operate for 25 years according to the Power Purchase Agreement (PPA).

ACWA Power has appointed 5 Capitals Environmental & Management Consultancy (5 Capitals) to prepare this Environmental & Social Impact Assessment (ESIA) for the Project. 5 Capitals has partnered with Environment & Development Group (EDG), who will be responsible for elements of the ESIA process, including baseline studies submission and liaison with the Egyptian Environmental Affairs Agency (EEAA). The ESIA has been informed by the Preliminary Environmental Assessment (PEA) Report, which is also referred to as the Environmental Scoping Study, prepared by 5 Capitals and has been prepared in accordance with Egyptian environmental regulations and the expected environmental and social requirements of the prospective Lenders.

**Components:** The project will comprise 1 x 200MW PV Plant using bi-facial technology. The PV cells within modules will be installed on fixed or tracking ground mounted racks arranged to ensure the most efficient alignment for the capture of solar radiation. Photovoltaic Power Plants use photovoltaic cells to generate electricity upon exposure to sunlight. This power generation technology converts solar radiation into direct current electricity using semiconductor materials in the form of a panel that exhibits photovoltaic effects. A typical PV Plant mainly comprises of a solar field which consists of a large group of semiconductor technology-based silicon solar cells arranged in what is known as solar PV Panels or PV Modules. The solar panels convert sunrays (photons) to electrons and the electron flow generates Direct Current (DC) electricity which gets connected and channelled into an electric device 'inverter' to convert the DC into Alternating Current (AC).

**Overhead Transmission Line (OHTL):** For connection to the grid, the 200 MW PV Project will connect to an existing four (4) row of 220kV OHTL referred to as Selwa Ben Ban 220kV, located approximately 4 km east of the Kom Ombo PV Plant as shown in the Figure below. The transmission line (yellow line in Figure below) that will connect the Kom Ombo 200 MW PV Plant to the existing Selwa Ben Ban 220kV OHTL will be installed parallel to the Faris – Luxor Road 1 along the road setback. This land is assigned to NREA by a presidential decree for the development of renewable projects.



**Alternatives:** The following project alternatives were considered at the feasibility stage:

- **No Project Alternative:** Should the “Do Nothing” scenario be applied, then the anticipated minor negative impacts discussed throughout the ESIA will not occur. However, as assessed in the ESIA report, these impacts which are most likely to happen during the construction phase, are not expected to pose significant risks and can be adequately controlled through the implementation of the mitigation measures discussed in accordance with the Framework for Environmental and Social Management (ref. Volume 3 of the ESIA). In addition, if the project were not to go ahead, the positive impacts and benefits that will result from the operation of the plant such as cutting carbon emissions, reducing reliance on traditional non-renewable power sources, socio-economic benefits, and the increase in renewable energy in line with ISES to 2035 and Egypt's SDG, will not occur. Therefore, the implementation of the PV Plant will have a positive impact in meeting the country's targets and the “No Project Scenario” is expected to hinder the Egyptian governments initiatives in achieving the above;



- **Site Selection:** The Project is part of a larger NREA owned land planned for PV projects. Therefore, the proposed site is already earmarked for the development of renewable projects by the government and assigned to NREA by Presidential Decree No. 116 of 2016. It is only reasonable to construct the 200 MW Kom Ombo PV Solar Plant adjacent to the other planned Solar PV Plants in line with NREA masterplan and as such this will benefit from certain common infrastructure and associated facilities; and
- **Technologies for Solar power technology:** different technologies were considered during the bidding stage including bi-facial type Solar PV Panels, single axis tracker technology mounting system and string or central inverters. Based upon the chosen design it is expected that the bi-facial type solar PV panels will maximise the efficiency of power generation from the Project.

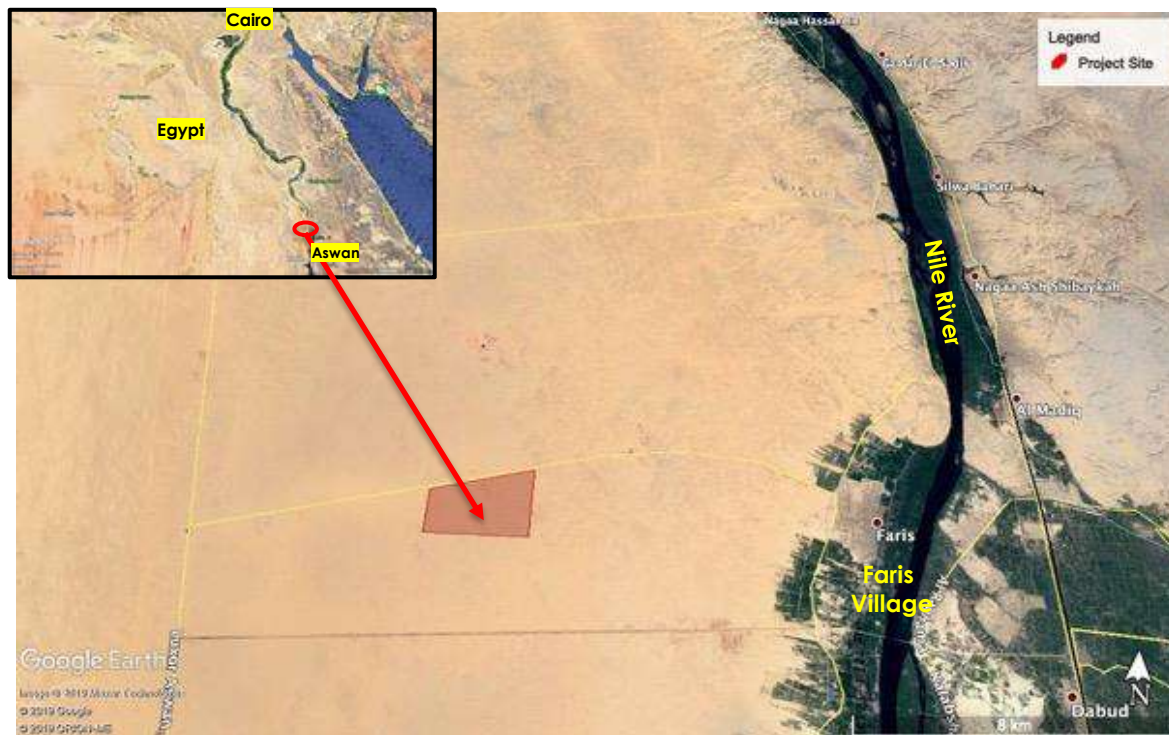
## 2 PROJECT DESCRIPTION

**Location:** The Project is located within a desert area of Kom Ombo town in the Aswan Governorate. The total area of the project site is approximately 5km<sup>2</sup>. The proposed site is located over 600km south of Egypt's capital Cairo, approximately 60km north of Aswan city and 10.8km east of the river Nile. The closest populated village to the Project site is Faris village located approximately 8.8km east of the Project site respectively.

**Site Conditions:** The project site is currently undeveloped with minimal vegetation cover which includes sparse and scattered shrubs in low-lying areas. The area has a rolling topography with an overall gentle slope towards the east and is covered with coarse sand and patches of gravel. Approximately 110m to the eastern boundary of the Project site are four (4) rows of 220kV Overhead Transmission Lines (OHTL). Directly adjacent to the northern boundary is a 2-way single carriageway road and approximately 2.7km to the southern boundary of the Project site is a 2-way dual carriageway road. Both of which runs perpendicular to the Al Ramadi Kebii – Al Raqaba road and the Luxor-Aswan road and connects the village of Faris to the Luxor-Aswan road. For ease of description, the roads to the north and south of the Project boundary will be referred to as Faris – Luxor Aswan road 1 and Faris – Luxor Aswan road 2 respectively as shown in Figure below.

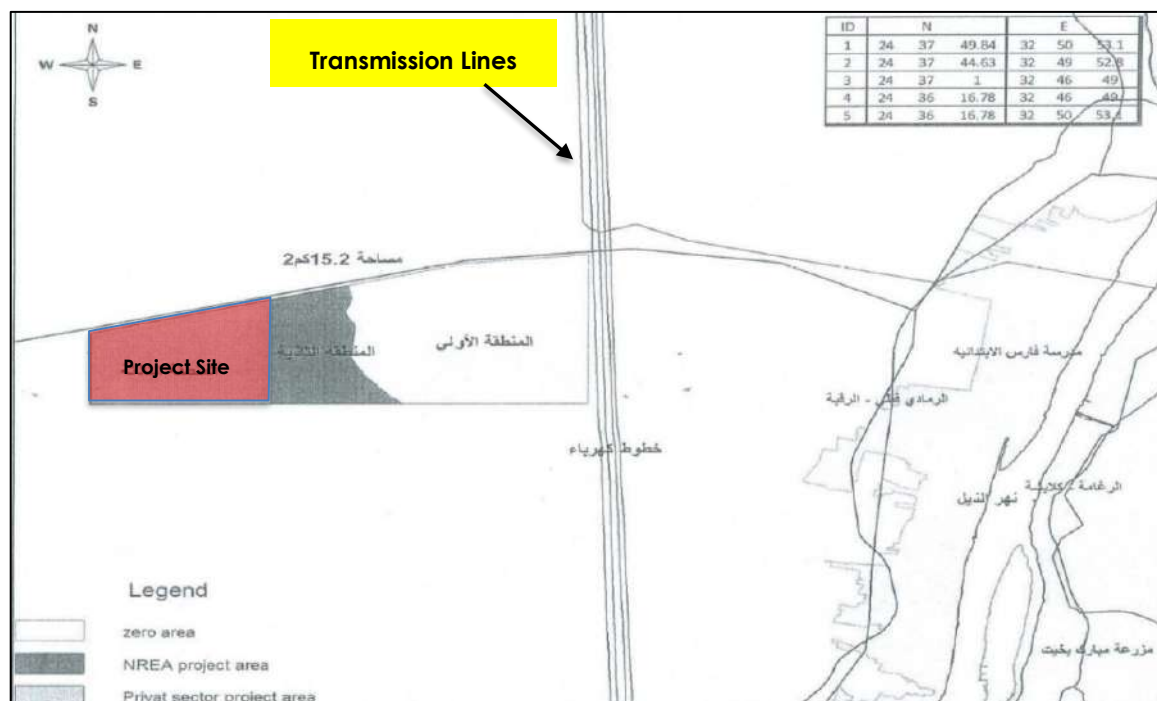


Figure 2-1 Project Location

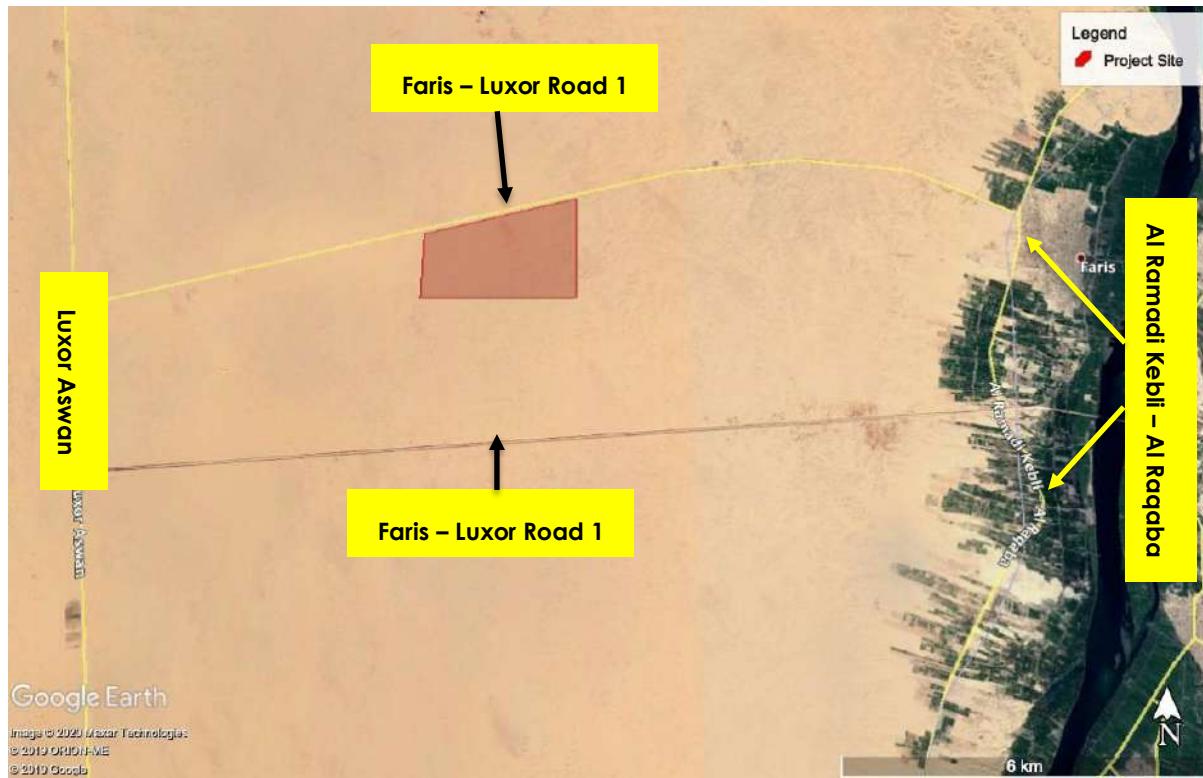


Source: Google Earth Pro, 2019

Figure 2-2 Location of Overhead Transmission Lines



**Figure 2-3 Road Infrastructure at Project Site**



Source: Google Earth Pro, 2019

**Surrounding Areas:** The project site is bounded by TSK PV Solar Power Project to the east, which is currently under construction. The closest receptor/user identified during the site visit conducted on 18<sup>th</sup> December 2019, are Faris Contractors Union situated approximately 100 m from the north eastern corner of the Project Site. The union is a group of local contractors who are currently providing different services to the neighbouring PV project which is currently under construction, owned by NREA and TSK. The union currently manages the construction waste generated from the adjacent TSK PV project by which they segregate, compact and give the waste to different recycling companies. The presence of the Faris Contractors Union is temporary and most likely they will relocate based on availability of work.

Located across the road to the north east approximately 150m from the Project site are a group of local contractors situated in caravans/ porta cabins. Similar to the Faris Union Contractors, they are not considered permanent users and most likely will move with the availability of work. The only residential area located within 5km radius is the New Faris Village located approximately 3.2km north east of the Project site. The housing project comprises of 100 houses that were developed by the Ministry of Housing and Governorate of Aswan for the unemployed youth from Faris Village. Currently, the housing development is abandoned as none of the locals from Faris Village moved into the housing project. Approximately 4.7 km north of the Project is an accommodation camp that was built by an EPC Contractor for one of the Projects in Kom Ombo. A private farm and an oil rig are located approximately 5 km

and 6 km west and south west of the Project site, respectively. The Faris village and the Nile River are located approximately 8.8km and 10.5km east of the Project site respectively.

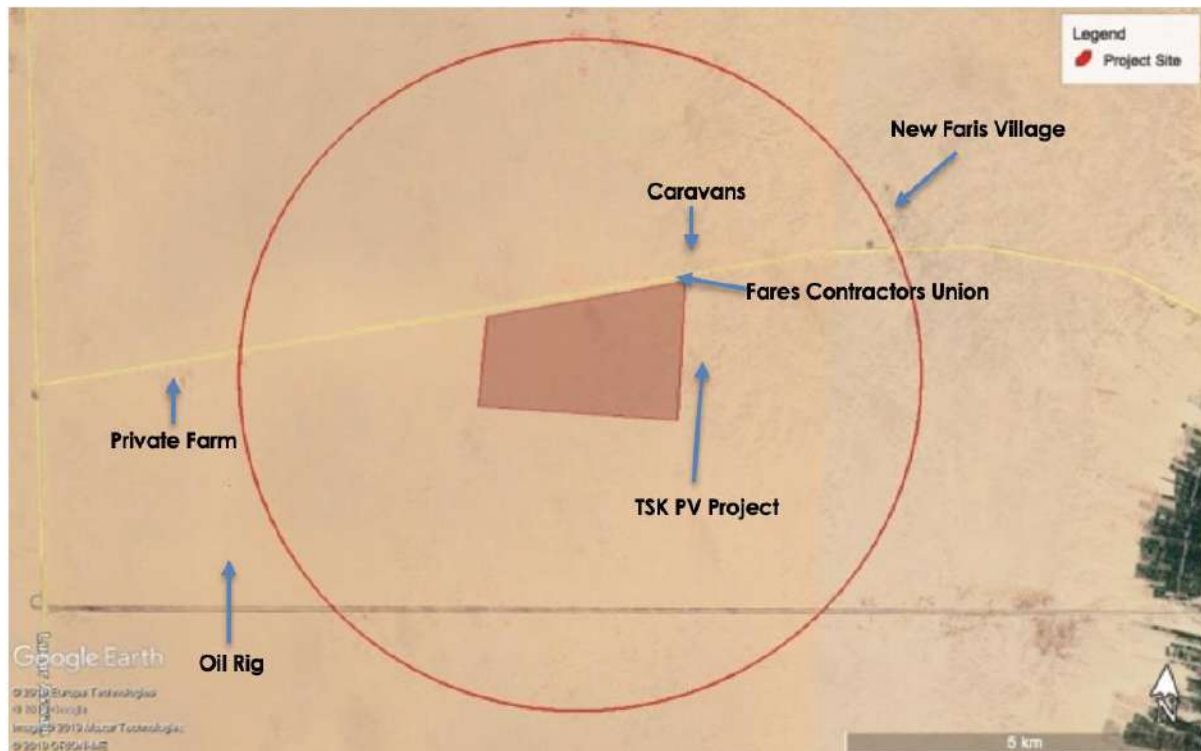
Table and Figure below present a description of the surrounding areas and land-uses within 5 km radius from Project boundaries.

**Table 2-1 Surrounding Land Use**

SURROUNDING AREA/ USERS	DESCRIPTION	LAND USE
Faris Contractor Union (Plate 2-2/ A)	A structure (with associated mobile caravans – referenced below) used by a group of local contractors who are currently providing different services to the neighbouring PV project. Located approximately 100m from the north eastern corner of the Project Site and within the road 50m setback.	Commercial
TSK PV Project (Plate 2-2/ B)	A PV project under construction owned by NREA and TSK located adjacent to Project site from the East.	Industrial
Caravans (local contractors)	Caravans for local contractors looking to work in PV projects located across the road to the north east approximately 150 m from the Project site.	Commercial
New Faris Village - Residential Development (Abandoned) (Plate 2-2/ D)	An abandoned residential development of 100 houses developed by the Ministry of Housing and Governorate of Aswan for unemployed youth in 2005. Development located approximately 3.2 km north east of Project site.	Residential (Abandoned)
Accommodation Camp	A worker accommodation camp located approximately 4.7km north of the Project boundary.	Residential
Private Farm (Plate 2-2/ C)	Private farm located approximately 5 km west of the Project site.	Agricultural
Oil Production Facility (Plate 2-2/ E)	Approximately 6 km southwest of the project site.	Industrial
Agricultural Farmlands	Approximately 7.8 and 8.2km south east and north east of the Project boundary.	Agricultural
Faris Village	Approximately 8.8km east of the Project boundary	Residential

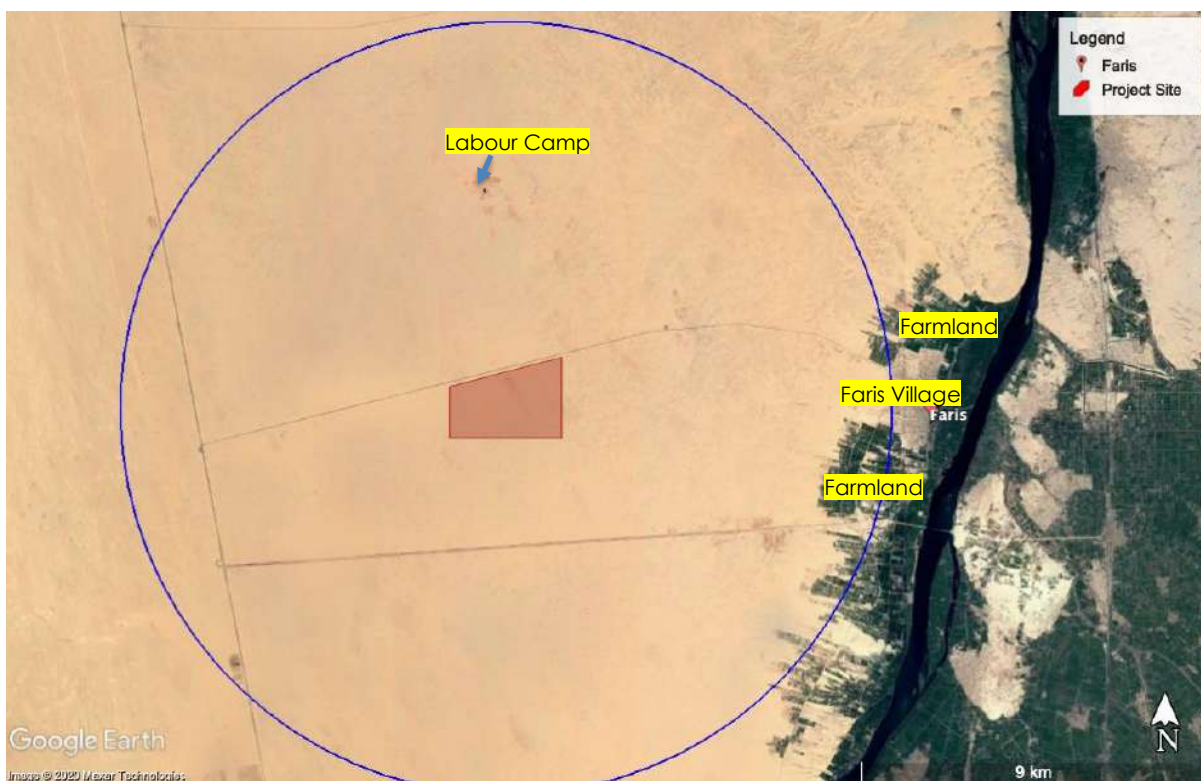


Figure 2-4 Surrounding Land Use (5 km Radius)



Source: Google Earth Pro, 2019

Figure 2-5 Surrounding Land Use (10 km Radius)



Source: Google Earth Pro, 2019

**Baseline Conditions:** The baseline environmental conditions in the project area were established through a combination of reviews of existing data sources and recent site inspections and field surveys (February 2020).

The existing ambient air quality conditions in the study area are considered good and all monitored hourly concentrations were below the Egyptian, WHO and EU standards for ambient air quality. This indicates an airshed that is not heavily influenced by pollution sources, for which there were few sources locally.

A noise survey was conducted at the Project site's fence line at four (4) locations and two (2) at receptor locations. Noise levels at all monitoring locations for day and night time surveys were below the Egyptian and IFC/WB noise standards for industrial areas. During the day time, the noise results were mainly influenced by the construction activities on going at the adjacent TSK PV Plant site and low traffic movement occurring at the time of the survey.

The habitat identified at the project and study area is typical of all desert regions and limited in diversity and coverage. The Project Site and the surrounding desert land is mostly barren and supports a very little permanent animal and plant life. Uni-specific patches of the shrub *Salsola imbricate*, scattered throughout the site represent the only vegetation cover in the area. Wild fauna of the Project Site is limited to few insects and other arthropods, reptiles, occasional birds and small mammals and are common throughout the Western Desert of Egypt (identified as Least Concern under IUCN listing). Most of the resident birds of the project site and the surrounding area are true desert species and are typical of the Western Desert.

Most recent investigations (2016) at the project site have revealed the geology at the Project site comprises of wadi deposits overlying sand layers. Groundwater was not encountered in any of the boreholes at the time of investigation (10 m depth). Based on the 2014 EIA done for the nearby TSK PV Power plant, in the reclaimed lands west of Faris, groundwater was being pumped from depths in the range of 70-100 meters for irrigation, as these lands have relatively high elevations to be irrigated by surface water.

Soil samples taken from the Project site showed concentration of a suite of heavy metals were below the established Dutch Standards. However, chromium and cobalt slightly exceeded the standards currently used unofficially by EEAA for assessing level of land contamination at one location (for Cr) and two locations (Co). Traces of TPH were detected in all samples which may be due to the past and current movement of vehicles across the site by locals and contractors who are currently providing different services to the neighbouring PV project located approximately 100m from the north eastern corner of the Project Site.

In terms of cultural heritage, there are no known or recorded sites of cultural importance (including tangible archaeological sites) in the Project area or the immediate vicinity or surroundings of the Project, including the access road and electrical connection points.

### 3 REGULATORY FRAMEWORK

The ESIA report has been prepared in accordance with Egyptian environmental regulations and the expected environmental and social requirements of prospective Lenders since the Project will seek finance from International Financial Institutions (IFIs). The lender requirements include the following:

- The African Development Bank (AFDB) Environmental and Social Assessment Procedures (2015);
- European Bank for Reconstruction and Development (EBRD) Environmental and Social Policy (2014) and Performance Requirements;
- Equator Principles III (2013);
- IFC Performance Standards (2012); and
- IFC EHS General Guidelines (2007).

The regulatory body responsible for the protection and promotion of the environment and the development of environmental regulations in Egypt is the Egyptian Environmental Affairs Agency (EEAA). The law that governs environmental protection issues and addresses pollution resulting from existing projects or establishments as well as potential pollution from new establishments and expansions of existing establishments in Egypt is the Law No. 4 of 1994 for the "Protection of the Environment" amended by Law No 9 of 2009. Other laws relevant to the construction and operation of the Project are discussed in details in the ESIA report.

According to EEAA Category lists of projects (Categories A, B and C) and communications with EEAA, this 200MW PV Project is categorised as a Category "B" project and requires the preparation of an Environmental Impact Assessment (EIA) Study.

The ESIA report will be submitted to EEAA as well as international project lenders.

### 4 IMPACT ASSESSMENT

The project will have a number of environmental and social impacts during the different phases of the Project. None of the environmental and social impacts assessed in the ESIA report were identified as significant or major and require immediate attention and additional measures. The majority of the impacts are of minor to negligible significance and are considered typical during the construction and operation of a PV power plant. Details of all the identified environmental and social impacts are provided in the ESIA report and are summarised below:

- Air Quality: There are no receptors of high sensitivity in terms of air quality around the PV plant. The closest receptors within 3 km (area of influence) are Faris Contractor Union, construction workers and future operational staff for the adjacent TSK PV Project and the temporary local contractors located

across the road. All are considered of medium sensitivity due to their close proximity to the project area, however none are located downwind from the Project site. Temporary construction impacts as a result of the project may result in increased dust generation, but will not impact receptors which none are located downwind from the Project area. Such impacts are common for construction activities in dry environments and can be appropriately managed through the implementation of a robust CESMP. The operation of the project is not expected to result in any impacts to air quality.

- Noise: The potential sensitive receptors to noise are similar to the air quality receptors. Temporary noise impacts will result from the construction phase of the project and will primarily be associated with heavy plant/equipment and construction vehicle movements. As a solar PV project, it is not anticipated that the Project will result in any operational noise and vibration impacts.
- Soil, Geology and Groundwater: During construction, impacts on soil and groundwater could arise from a number of activities. These include excavation and soil compaction, accidental spills or leaks, disposal of wastewater and inadequate management of waste. Due to the depth of the groundwater at the wider area (range of 70-100 meters west of Faris Village) and the fact groundwater was not encountered in any of the boreholes during the geotechnical investigation conducted for the Project site in 2016, it is not expected that any contamination will reach groundwater. Specific project impacts to soil, groundwater and geology are not expected during the operational phase. Potential risks of concern during the operational phase are expected to be limited to the management and storage of hazardous materials/wastes/wastewater, chemicals and fuels. However, with the provision of the mitigation measures recommended in the ESIA, no significant environmental impacts are envisaged.
- Solid Waste and Wastewater: Construction of the project may result in the generation of rubble waste due to excavations, expected large volumes of recyclable PV module packaging wastes, and very small quantities of hazardous wastes (such as used fuel containers, spent paint cans, lubricant cans and oil cans, vehicle/plant maintenance wastes). During operations, there will be relatively few waste streams, although defective PV panels and other maintenance wastes may be generated in small quantities on a continued basis. Other wastes will be minimal and varied, but may contain small quantities of hazardous components. The ESIA outlines appropriate mitigation and management measures that can be implemented to suitably manage waste during both project phases. Hazardous waste generated from the Project will most likely be transported by road vehicles for a long distance to the only hazardous waste facility available in Egypt located in Alexandria (approximately 770 km). Therefore, it will be particularly important to properly store the waste in designated and secured hazardous waste storage areas at the site until collection to final disposal.
- Terrestrial Ecology: The construction phase will result in loss of sand/gravel habitat due to site preparation activities, although this habitat is typical of the arid desert environment and is not of high value. During operation, birds in proximity to the site are not expected to be impacted by the project directly, but may indirectly be attracted to the site under the influence of 'lake effect',



a potential phenomenon whereby birds mistake the reflective surfaces of solar PV panels for the surface of water.

- Cultural Heritage:** There are no known or recorded sites of cultural importance (including tangible archaeological sites) in the Project area or the immediate vicinity or surroundings of the Project, including the access road and electrical connection points. This has been corroborated to date in the scoping consultation sessions and other focus groups conducted as part of the consultation activities. There has been no concern raised or other knowledge imparted about cultural features on these lands. Although there are no archaeological artefacts within the site or areas that may have archaeology significance in close proximity to the site, there is still a potential for encountering unknown buried archaeology within the Project site during excavations. As such, the project will require a 'Chance Finds Procedure' in the construction phase ESMS in the unlikely event that any items of archaeological significance are uncovered during construction. During the operational phase of the Project, there will be no potential impact to archaeology as excavations will not be required.
- Landscape and Visual Amenity:** The development of the Project will include the installation of thousands of PV panels, the construction of substations, administrative facilities, etc. which will alter the existing undeveloped desert landscape character. The view of the characteristic brown sands and gravel, will be replaced with a view of dark coloured flat PV Panels. There are no permanent dwellers within 1 km from the Project site. Permanent dwellings over 1km from the Project site boundary include the New Faris Village located 3.2km north east of the Project site, the accommodation camp located approximately 4.7km north of the Project site, the private farm approximately 5 km west of Project site and Faris village approximately 8.8km east of the Project site. Based on the viewsheds generated for the identified permanent receptors, the PV Power Plant will be most likely visible from the New Faris Village and accommodation camp. Due to the low-lying design of the PV Plant, views across the wider landscape are unlikely to be significantly impacted. The Project area may however be visible at night due to the addition of security and lighting at the entrances and along the perimeters. Mitigation measures related to the use of lighting have been included to the ESIA to minimise potential visual impact at night by minimising skyglow, light spill onto neighbouring land and reduced glare by angling lights toward the ground.
- Community Health, Safety and Security:** All construction projects have potential risks relating to public safety that could arise, particularly in regard to the use of high-powered equipment, heavy construction plant, excavations, transportation amongst others, including fire and pollution releases. Public risks during construction have the potential to result in isolated incidents, which could be of a devastating magnitude to a person or group of people in the wrong place at the wrong time. Risks that could be experienced include worker influx and disease and transportation impacts, as traffic will increase on public roads to deliver materials and equipment to the project site during construction. This may include an increase in road traffic incidents. In order to manage traffic related impacts (including safety risks to other road users), the EPC Contractor will prepare a Traffic Management Plan for implementation on-site and the surrounding roads. Other risks will be appropriately assessed

and prepared in the construction phase 'Emergency Preparedness and Response Plan' and training. Furthermore, security staff will be onsite during both the operation and construction phase.

- Socioeconomic: There are no ethnic minorities, indigenous peoples or internally displaced people in the project area, or nearby. This project will reduce Egypt's dependency on fossil fuel generated power and will reduce atmospheric pollution; in comparison to other power generation technologies in the current energy mix of Egypt. It will also support the continued growth of the national economy through the provision of sufficient power supplies in Egypt.
- Labour and Working Conditions: The risks associated with the construction and operational phase of the project are anticipated to be related to occupational health and working conditions risks. The impacts during operation are expected to be significantly less than during the construction phase due to reduced site activity and requirements for heavy plant and machinery. These risks should be managed through effective risk assessment, development and implementation of an Occupational Health & Safety (OH&S) Plan.

### **Transmission Line E&S Assessment**

A high-level assessment was carried out of the expected environmental and social impacts in regard to the transmission line that will link the 200 MW Kom Ombo Solar PV Plant to the Egyptian electrical grid (existing Selwa - Ben Ban OHTL). The transmission line will be developed within land assigned to NREA by a presidential decree for the development of renewable projects. The transmission line is considered an 'Associated Facility' and will be developed, constructed, commissioned and operated by EETC. The transmission line corridor is currently undeveloped, mostly barren with minimal vegetation. There are no signs of past or on-going apparent uses observed within the route. Other than the abandoned housing development located 380 m to the north and the adjacent TSK PV Plant construction site, there are no permanent receptors of high sensitivity identified within the transmission line route and wide project area. Due to the limited presence of receptors within the project area, the majority of the impacts that will arise during the construction phase will have minimal effect on receptors and any residual impact is expected to be minor and can be readily mitigated and managed by standard measures and controls common for OHTL. For the operation phase, the impacts are very limited and most likely will not result in any significant impacts due to the lack of lack of permanent receptors in proximity to the transmission line route. The potential impacts to bird species from the transmission line, is considered to be of minor significance given the limited importance of the area in relation to migratory and resident birds. In addition, none are of the bird species identified within the project area are listed as threatened locally or internationally (IUCN lists).

## 5 PUBLIC CONSULTATIONS

Consultation has been carried out with local communities and local government representatives to identify any community concerns or opportunities associated with the project. Several stakeholders were identified and included community stakeholders who may potentially be affected by the project, whether directly or indirectly, as well as other interested parties, such as CSOs and NGOs and institutional stakeholder who may be involved in one way or another in the construction or subsequent operation of the Project. Stakeholders, and their relevance to the project are listed below. Consultations were carried out during the scoping stage on the 17th and 18th with members of Faris Village Community. In addition, designed focus group discussions were carried out on the 2nd of February and included members of the community who may be directly or indirectly affected by the project. Furthermore, an interview was conducted with the head of the Faris Contractors Union and one of the community leaders to further understand the community's expectations pertaining to direct and indirect positive impacts of the Project. While there were a few civil society organizations in the Village, they appeared to be not very active, except for the Farmers' Association, which the team met with its head. Finally, for institutional stakeholders, the team met with the Head of the Local Council to further understand the local government's view of the Project, as well as a representative of NREA to understand the role of the different institutional stakeholders.

Due to the COVID-19 pandemic, and as an alternative method to the typical public hearing, a video/presentation has been circulated through a WhatsApp group with simplified Arabic narration disclosing the project, impacts, mitigation and feedback and grievance mechanisms for the project. The WhatsApp group included, family and community heads, NGO representatives, civil society representatives, students at the solar power schools in Aswan, journalists, and members of the community. A questionnaire was also circulated through WhatsApp and was also made available within the Village at different locations (such as at offices/residences of Members of the Parliament and well-known families in the community).

A Stakeholder Engagement Plan (SEP) has been developed for the Project which outlines the proposed methodology for stakeholder engagement throughout the lifecycle of the Project. The grievance mechanism for the Project during the construction and operation of the project is also outlined in the SEP.

**Table 5-1 Stakeholder Engagement/ Consultation**

STAKEHOLDERS	DESCRIPTION/ CONCERNS
Directly Affected Potentially Affected People (PAP)	Includes Faris villagers who may be directly or indirectly affected by the project. Those include:

STAKEHOLDERS	DESCRIPTION/ CONCERNS
	<ul style="list-style-type: none"> <li>○ Unemployed youth and those with temporary jobs</li> <li>○ High school and university students</li> <li>○ The Faris Contractors Union</li> <li>○ Users of the Luxor – Aswan Western Highway</li> </ul>
Indirectly Affected PAP (the community at large)	<ul style="list-style-type: none"> <li>○ Farmers</li> <li>○ Employees</li> <li>○ Pensioners</li> <li>○ Women</li> <li>○ Youth</li> <li>○ Children</li> </ul>
Interested Parties	<p>Stakeholders who are not necessarily affected by the Project, but may be interested and/or involved in it.</p> <ul style="list-style-type: none"> <li>○ Members of the Civil Society</li> <li>○ Institutional stakeholders: involved in construction and/or operation of the Project <ul style="list-style-type: none"> <li>- New and Renewable Energy Authority: Competent Administrative Authority and land owner</li> <li>- Egyptian Electricity Transmission Company: electricity off-taker, responsible for construction and operation of transmission substation</li> <li>- Egyptian Electricity Regulatory Authority: issuing the construction permit and power generation permit</li> <li>- Egyptian Environmental Affairs Agency: reviewing and approving the ESIA and issuing the environmental permit</li> </ul> </li> <li>○ Governorate-Level Stakeholders <ul style="list-style-type: none"> <li>- Governorate of Aswan: the local government</li> <li>- Governorate's Environmental Management Office: inspecting the project and ensuring compliance with its Environmental and Social Management Plan</li> <li>- Civil Protection Authority: approving the firefighting plan</li> <li>- Governorate's Labour Office: inspecting the project and ensuring compliance with the Egyptian Labour Law</li> <li>- Faris local council: management of village resources</li> </ul> </li> </ul>

## 6 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

Volume 3 of the ESIA provides a framework for the development of the Environmental and Social Management System (ESMS) for the construction and operational phases of the project. The framework has been developed to ensure that all environmental and social impacts are appropriately identified and controlled through the development of a robust ESMS and associated Management Plans.

The construction and operational phases of ESMS will incorporate mitigation and monitoring requirements established within Volume 2 of the ESIA as well as requirements set out by the Lenders. The primary documents guiding the environmental and social management of the construction and operational phases will be the Construction Environmental & Social Management Plan (CESMP) and the Operational Environmental & Social Management Plan (OESMP) respectively.