2024

Environmental and Social Management Plan

KADIRLI MUNICIPALITY

SOLAR POWER PLANT

Table of Contents

Figure List

Graphic List

Table List

Annexes

Executive Summary

ILBANK (The Bank of Provinces in Turkey) and the World Bank (WB) have collaboratively devised the Sustainable Cities Projects, which constitute a series of initiatives (SCP I and II are presently underway). This Environmental and Social Management Framework (ESMF) is specifically crafted for the Additional Financing (AF) of SCP II, intending to establish an augmented support mechanism. This augmentation is in response to the escalating demand from Municipalities seeking investments in sustainable urban development within the ongoing framework of the Sustainable Cities Program. The overarching goal of this program is to assist municipalities in enhancing urban planning, infrastructure development, capital investment planning, and fortifying municipal financial capacities, including creditworthiness.

All investments implemented through this Project will strictly adhere to both the Environmental Regulations of the Republic of Turkey and the Safeguard Policies of the World Bank. To ensure compliance, ILBANK will serve as the financial intermediary, overseeing the adherence to WB policies and procedures. Additionally, ILBANK will ensure that all requisite Turkish environmental approvals, licenses, and permits are obtained.

With financial support from the World Bank for renewable energy projects belong to municipalities, a solar power plant project located in Kadirli, a district within Turkey's Osmaniye province, has been initiated by Kadirli Municipality. This project aims to increase the share of renewable energy sources in the country's energy mix and reduce greenhouse gas emissions.

The installed capacity of the plant is 1220,8 kWp/999,0 kWe, which is subject to annex-II of EIA regulation (Annex 2) and it is expected to generate 2.060.385,00 kwh of electricity annually. The project site is located on a 5-hectare land owned by Kadirli Municipality (Annex 1). The solar panels used in the project are of high quality and have a lifespan of 30 years. The project was designed and constructed by a team of experienced engineers and technicians. The project developer has prepared and ensured the project in compliance with international quality and safety standards. The plant is equipped with state-of-the-art technology, including inverters, transformers, and monitoring systems. The plant is connected to the national grid which has been constructed as a part of the project.

The project has been financed by the World Bank through a loan agreement with Kadirli Municipality. The loan has been provided on favorable terms, with a low-interest rate and a long repayment period. The loan has been used to finance the construction of the solar power plant, including the procurement of equipment and the construction of the power plant. The solar power plant project is expected to have a significant impact on the local economy and the environment. The project will create job opportunities during the construction phase and the operation phase. The project will also contribute to the development of the local infrastructure, including the construction of the substation and the transmission line. The project will also have a positive impact on the environment by reducing greenhouse gas emissions. The solar power plant will generate clean energy, which will replace the energy generated from fossil fuels. The project will also contribute to the country's efforts to address climate change. The solar power plant project in Osmaniye, Kadirli is a significant step towards the development of renewable energy sources in Turkey. The project in Kadirli has the potential to serve as a model for similar projects in Turkey.

The Environmental and Social Management Plan (ESMP) for this solar energy plant project plays a crucial role in the project's execution. The ESMP acts as a comprehensive guide to monitoring, assessing, and mitigating adverse environmental and social impacts throughout the project's lifecycle. This ensures that the project delivers a positive influence on the environment and the

community. The ESMP guarantees compliance with local legal regulations and international standards. It ensures that the project operates in accordance with legal requirements.
This project's provision of clean energy aligns with SDG 7, which targets Clean Energy. Additionally, it positively contributes to Good Jobs and Economic Growth (SDG 8). By reducing reliance on fossil fuels and limiting greenhouse gas emissions, this solar energy plant project supports Turkey's efforts in combatting climate change. It aligns with Turkey's climate action plans and commitments.
In conclusion, the ESMP for this solar energy plant project is a critical document, emphasizing the project's potential for both environmental and societal benefits. It ensures that the necessary steps are taken to monitor and mitigate environmental and social impacts with a focus on the project's unique aspects. Furthermore, it makes a valuable contribution to sustainable development goals and aligns with Turkey's climate action plans.

1. Sub-Project Description

Within the scope of this report, the SPP project planned by Kadirli Municipality was examined to prepare ESMP for this sub-project.. Kadirli Municipality will install SPP according to the connection power given in the Table 1. It is planned to produce 2.060,3 MWh/year of electricity with this installed power.

The project land is owned by the Ministry of Treasure and Finance of Turkey, the project land is allocated to the municipality for two years to start and complete the project (Annex 2: Official Decision “EIA Not Required” of Osmaniye Provincial Directorate of Environment and Urbanization

T.C.
OSMANİYE VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

Sayı : E-51765934-220.03-8285191 20.12.2023
Konu : Muafiyet

KADİRLİ BELEDİYE BAŞKANLIĞINA

İlgi : 20/12/2023 tarihli ve "192140" Referans No'lu Başvuru.

İlimiz, Kadirli İlçesi, Kurtuluş Mahallesi Mevkii, 135 Ada, 21 Parsel sınırları içerisinde tarafınıza tahsis edilen 18.100 metrekarelik alanın 15.000 metrekarelik alanında tarafınızca yapılması planlanan Güneş Enerji Santrali-GES (999 kWe) 29/07/2022 tarih ve 31907 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği Listelerindeki sınır değerden az olduğu için kapsam dışı olarak değerlendirilmiştir.

Bu kapsamda;

1-Kapsam Dışı Kararına esas dilekçe ve eklerinde belirtilen tüm taahhütlere uyulması,

2-Proje kapsamında yapılması planlanan değişikliklerin planlama aşamasında İl Müdürlüğümüze bildirilmesi,

3-Projenin İnşaat, işletme ve işletme sonrası dönemlerinde 2872 sayılı Çevre Kanunu ile 5491 sayılı Çevre Kanununda Değişiklik Yapılmasına Dair Kanuna istinaden çıkarılan yönetmeliklerin ilgili hükümlerine uyulması,

4-Diğer mer'i mevzuat çerçevesinde öngörülen gerekli izinlerin alınması, izin alınmaksızın herhangi bir yatırım yapılmaması/faaliyete başlanılmaması,

5-Çevresel Gürültü, Emisyon, Atıksu, Atık vb. çevresel konular kapsamında, faaliyet esnasında oluşması muhtemel sorunların kaynağında önlenebilmesi ve herhangi bir mağduriyet yaşanmaması adına gerekli tüm tedbirlerin alınması,

6-Ekolojik dengenin korunmasına, çevrenin korunmasına ve geliştirilmesine yönelik tedbirlere riayet edilmesi gerekmektedir.

Bilgilerinizi ve gereğini rica ederim.

Hamdi Görkem GENÇTÜRK
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Çevre, Şehircilik ve İklim Değişikliği İl Müdürü

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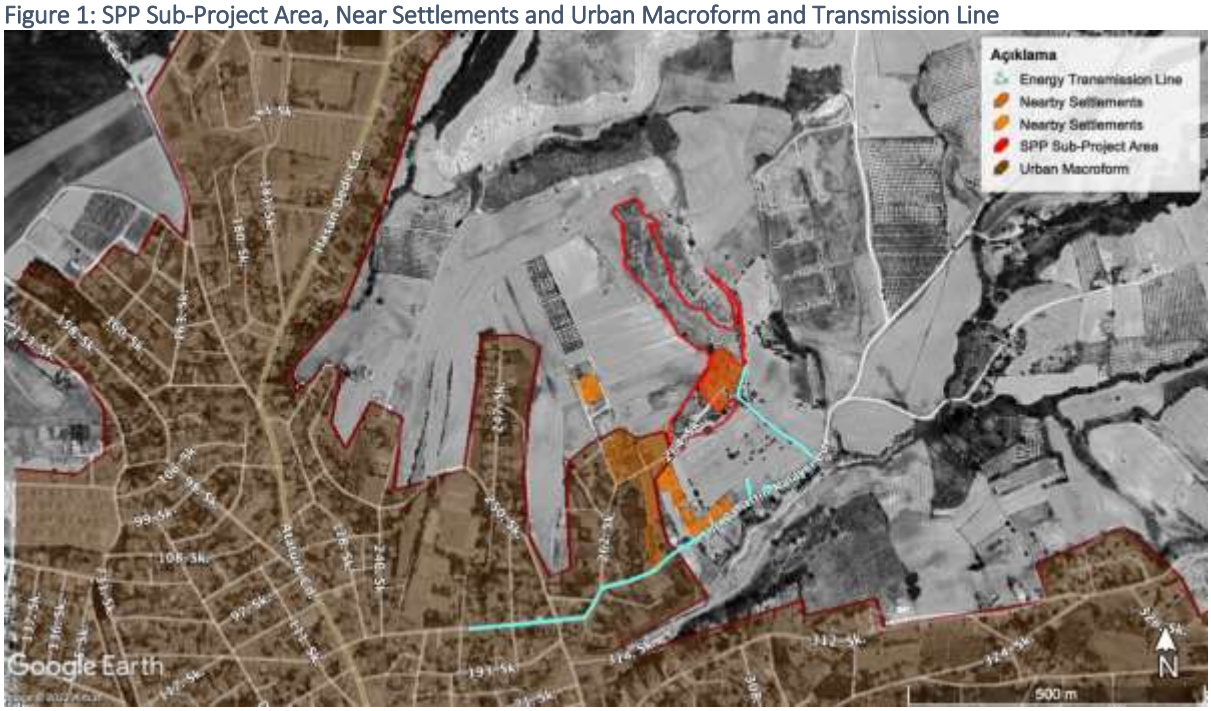
Annex 3:Official Allocation Document of SPP Project Area

). The project implementation capacity is less than 1 Mwe and exempted from all environmental requirements by local environmental impact assessment regulation. The project transmission line

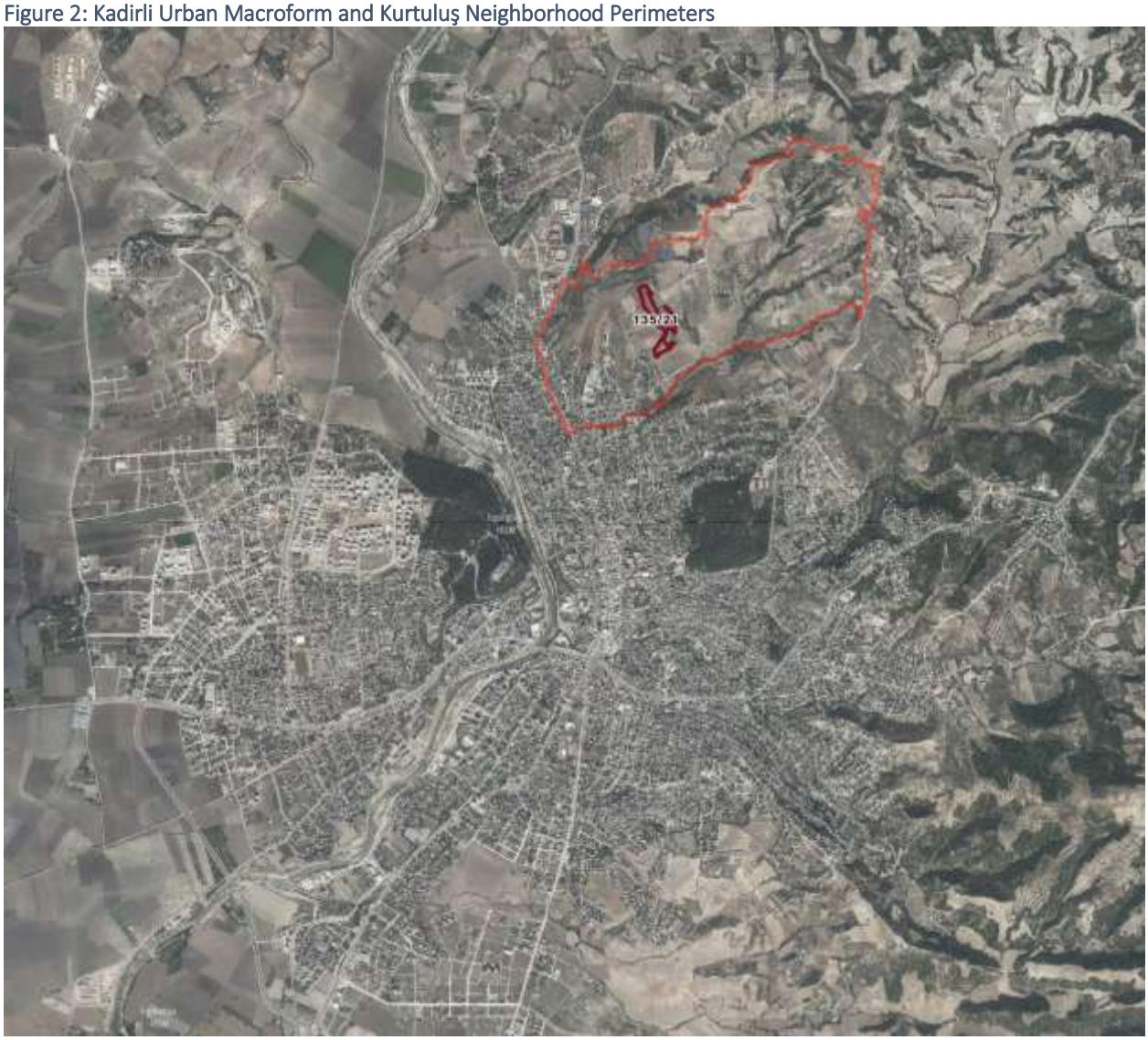
connection distance is 997 meters from the solar power plant. The transmission line is passing through the road, so no additional expropriation is required for 33 kV transmission line (Figure 1). There is an existing road coming to the project site which needs to be rehabilitated for easy access of the project material. The width of the road that needs to be improved is determined as 10 meters in the 1/5000 scale master zoning plan and 1/1000 scale implementation zoning plans (Annex 5 and Annex 6). In addition, in these zoning plans, it is seen that the entire cadastral parcel is not reserved for the solar power plant, and the zoning parcel boundaries are rearranged in accordance with the Zoning Law.

Figure 1: SPP Sub-Project Area, Near Settlements and Urban Macroform and Transmission Line



The Solar Power Plant project area is located in the Kurtuluş District, located in the north of the city center, on the periphery of the existing Kadirli Central city macroform. Urban area development is observed in the southwestern part of the neighborhood, which has occurred in recent years. As can be seen from the Figure 2, the majority of Kurtuluş district is rural. The project area is located in the western part of the neighborhood, close to the area where urban area development is located. the project site is far from the residents, except the for four residents located right next to the project site. These four households are adjacent to the parcel boundary where the project site is located and are located approximately 40-50 meters away from the parcel boundary (Nearest Settlements). Other nearby settlements are within the region with a radius of 400 meters when the project area is taken as the center (**Hata! Başvuru kaynağı bulunamadı.**).

Figure 2: Kadirli Urban Macroform and Kurtuluş Neighborhood Perimeters



The SPP projectis prepared within the scope of 30th clause and Article 1 of the "Regulation on Unlicensed Electricity Generation in the Electricity Market" the electricity consumption of the relevant institutions netting with the electricity generation of the power plants to be made over the electricity unit price determined according to the subscription type of the institutions in the Electricity Tariff published by EMRA.

Planned Solar Power Plant has **1220,8,0 kWp DC Capacity, 999,0 kWe AC Capacity.** Equipped with 670 Wp MonoPerc Half-Cut modules with **30° tilt, 25° azimuth angle.**

When the economic life of the plant expires at 30 years, it will be decommissioned, and the cost is written into the cash flow as **decommissioning cost** which is EU **32.000,00/MWp**. So the overall power plant decommissioning cost will be, **EU 39.063,68.**

Table 1: Planned SPP Technical Details

Technical Information	
FV Panel Type	Monocrystalline MONOPERC
FV Panel Power Output	670 Wp
FV Panel Count	1822
Annual Degradation	%0,5

Inverter Power Output	100 kW
Inverter Count	10
Total DC Power	1220,8 kWp
Total AC Power	999,0 kWe
Estimated Annual Energy Production	2.060.385,00 kWh
Annual Energy Consumption	2.060.385,00 kWh
Production/Consumption	%100
Decommissioning Cost	EU 39.063,68

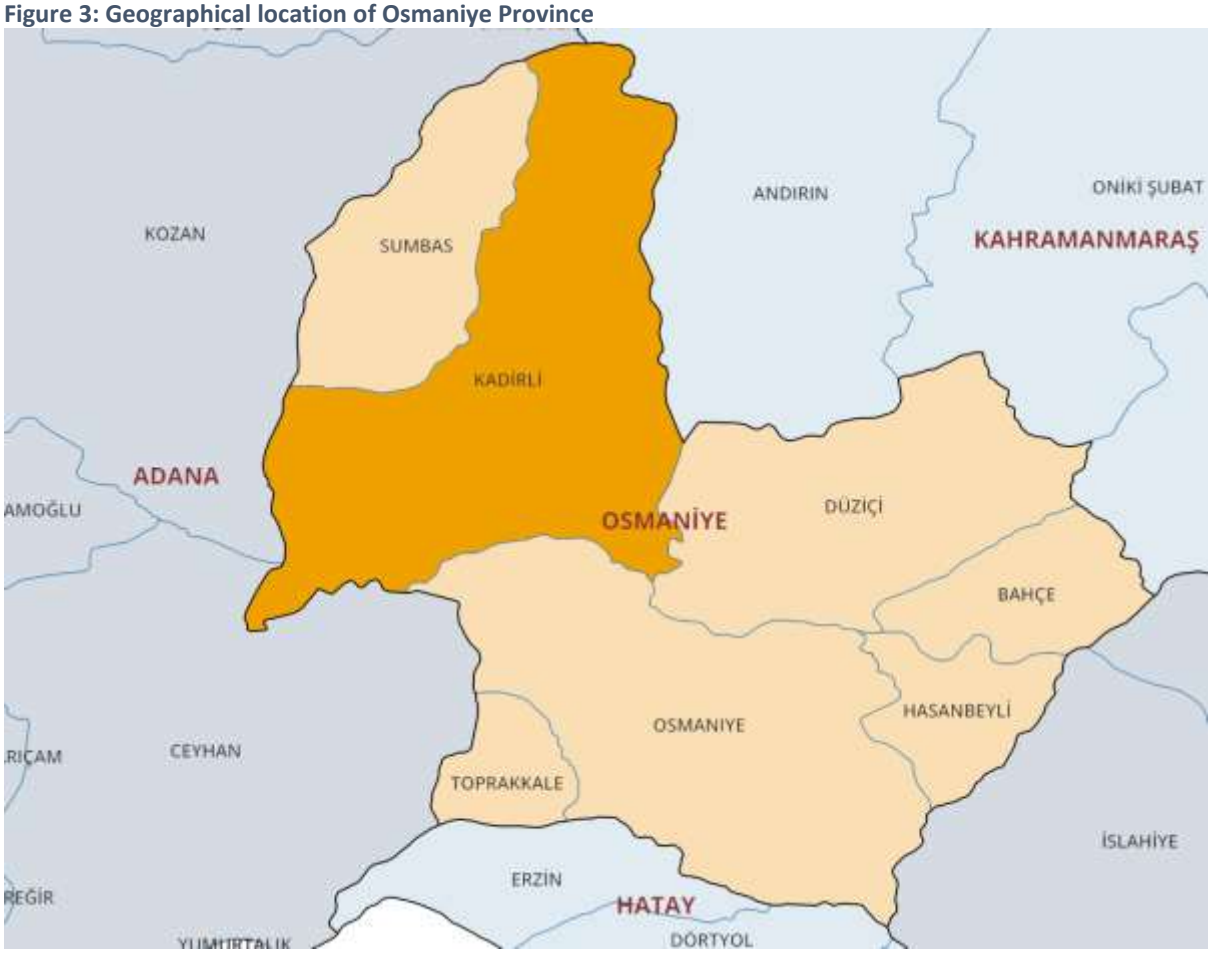
Location and Topography

Osmaniye Province is located in the Eastern Mediterranean Region, on the fertile lands east of the Ceyhan River in Çukurova. It is bordered by Gaziantep to the east, Hatay to the south, Adana to the west, and Kahramanmaraş to the north. Osmaniye, with its geographical location and natural structure, is suitable for agricultural production, animal husbandry, and forestry. The influence of expanding industries in the surrounding provinces, coupled with investments and widespread incentives, is observed in various industrial sectors in the province, leading to economic activity and diversification of income. As of the year 2022, the population of Osmaniye province is 559,405, constituting 0.66% of the country's population. In terms of population, it ranks 39th within the country.

The district of Kadirli is located in the Adana Section of the Mediterranean Region in Turkey, in the northeastern part of Çukurova, which forms the largest alluvial plain in Turkey. The district is situated at the intersection of the Middle Taurus Mountains and the Amanos Mountains, to the north of the Osmaniye province. It is surrounded by Andırın and Düziçi to the east, Sumbas and Kozan to the west, Osmaniye province to the south, and Feke and Saimbeyli districts to the north. The determination of the district boundaries has been largely influenced by the location and direction of surface features. The strategic position of Çukurova, serving as a significant gateway between the Inner Anatolia, Southeast Anatolia, and Mesopotamia on one side and the eastern coast of the Mediterranean through Syria on the other, its coastline suitable for maritime transportation, and its ease of connectivity with other regions of the Mediterranean have further increased its historical importance. Kadirli district, surrounded by the Taurus Mountains to the north, the Amanos Mountains to the east, and the Mediterranean to the south, is located in the largest alluvial plain of Turkey, Çukurova, making it a settlement area since ancient times. The plateaus, hills, ridges, and slopes belonging to the Taurus Mountains, along with extensive and fertile alluvial plains, have allowed the establishment of permanent or temporary dwellings, farms, neighborhoods, villages, towns, and the city of Kadirli in almost every suitable place.

The topography of Kadirli is generally mountainous and rugged. Since the district is located on the northern slopes of the Taurus Mountains, mountainous regions dominate. Naturally, valleys, high plateaus and sloping terrain can be found. The surrounding geography can offer diversity in terms of agriculture and natural beauty.

Figure 3: Geographical location of Osmaniye Province



Project Land Use Rights

According to information received from the municipality the project site is rented from Kadirli Municipality. Kadirli Municipality is the sole owner of the project site and the site has single land register deed. Remarkably, the Municipality eliminates any complexities arising from multiple ownerships. The project site, in the Kurtuluş neighborhood with the lot 21 of the block 135, encompasses a substantial total area of 24,248.82 square meters. Notably, the right to property use is vested in the municipality, reinforcing its authoritative position over the land allocated for the project. Furthermore, the strategic placement of the transmission system passing through the project site, seamlessly connecting with the transmission system adjacent to the site road, has obviated the need for any expropriation proceedings related to the transmission systems. This consolidated information underscores the clear and unambiguous land use rights associated with the project area, solidifying the municipality's pivotal role in facilitating the implementation of the planned Solar Power Plant (Table 2).

Table 2: Planned SPP Land Information

Land Information	
Type	Main Property
Province, District, Nbhd.	Osmaniye, Kadirli, Kurtuluş
Block, Parcel	135/21
Total Area	24.248,82 m2
Right to Property Use	Municipality - Ownership
EIA Status	The sub-project is exempt from EIA due to Regulation on Environmental Impact Assessment (Official Gazette No. 31907, July 29, 2022)-Annex II,

	because of total AC power is equal to 999,0 kWe. (Annex 2)

2. Environmental and Social Screening

The Kadirli Municipality's solar power plant project aim is to use solar energy in electricity generation, reduce the use of fossil fuels, and decrease dependence on external sources by utilizing renewable energy sources in electricity production. The project undergoes stakeholder engagement and complaint procedures with a monitoring mechanism to address any concerns raised by residents. Assessments indicate no adverse human rights impacts, promoting inclusivity and equal distribution of resources, with no identified risks of conflict or violence. Also, women's groups or leaders have not expressed gender equality concerns, and the project is not anticipated to adversely impact gender equality or the situation of women and girls. There are no foreseen limitations on women's access to natural resources, and the project is not expected to contribute to environmental degradation or exacerbate risks of gender-based violence.

The solar power project reduces reliance on fossil fuels, lowering environmental impact and mitigating climate change effects. By incorporating solar energy into the urban energy mix, the project enhances energy resilience, diversifies energy sources, and contributes to the sustainability of the urban area. Additionally, the project's location is in the rural area could be an advantage for Kadirli's future spatial planning studies to integrate renewable energy infrastructure, contributing to the environmental and spatial dimension of sustainability. The project lowers the municipality's electricity expenses, enhancing economic sustainability and local people will be provided with employment in a new business field. Also, fosters green jobs and skill development in the renewable energy sector. Additionally, the project serves as a visible example of sustainable practices, inspiring broader shifts toward sustainability in urban planning and development, and in environmental and social management.

The project prioritizes accountability by embracing transparency in decision-making through active stakeholder engagement, accessible information, and responsive grievance mechanisms. Regular stakeholder engagement activities, such as meetings and workshops, would create a platform for dialogue, ensuring stakeholders' concerns are heard and fostering a sense of ownership. The establishment of a robust grievance mechanism would underscore the project's commitment to addressing stakeholder concerns in a timely manner. Measurable performance indicators and regular reporting would contribute to accountability by allowing stakeholders to assess the project's success against predetermined benchmarks and providing detailed insights into its activities and outcomes.

Solar power plant projects, both during construction and operation, present several environmental impacts across different dimensions. In terms of soil and geology, the removal of the vegetative topsoil layer may lead to a decline in soil organic matter, impacting fertility. Furthermore, activities like leveling, excavation, and filling, coupled with the operation of construction equipment and vehicular traffic, pose the risk of soil compaction. The consequence of such processes extends to soil erosion and loss due to precipitation. Additionally, the handling of vehicles and equipment, including maintenance and fueling operations, may result in the uncontrolled or accidental release of pollutants, such as hydrocarbons, potentially contaminating the soil.

The construction phase introduces noise and vibration concerns, including temporary traffic-related noise and disturbances caused by construction activities. During the construction-assembly phase of the project, noise may occur due to the use of machinery. These disturbances encompass the installation of solar panels, use of construction vehicles, and activities like blasting, rock extraction, and foundation construction, potentially causing discomfort and structural damage.

Air pollution is another facet, with potential emissions stemming from dust generated during soil excavation and construction activities. During the construction phase, the use of diesel as fuel for the machinery operating in the project area during the assembly process will result in the emission of gases such as NOx, CO, SOx, HC, etc. Vehicle traffic on stripped surfaces within the site and

exhaust emissions from both traffic vehicles and on-site machinery contribute to the airborne pollutant load, albeit typically at limited levels contingent on project size.
The effects on people encompass temporary transportation route blockages, damage to infrastructure along traffic routes, and potential health impacts such as discomfort, noise, vibration, and airway-related ailments during both construction and operation stages. Conversely, improvements in traffic safety and air quality may result from altered routes.
In the course of project activities, various types of waste are generated. These include municipal waste, encompassing household refuse, as well as packaging waste derived from panels and other system components. In the project, domestic solid waste, packaging waste, excavation waste and topsoil waste will be generated as non-hazardous waste during the construction and operation phases. Additionally, hazardous waste is produced, incorporating chemicals like paints and solvents, their containers, oily packaging, and cloths. Special wastes, such as electronic waste from system components like panels, cables, and other electronic apparatus, also contribute to the waste accumulation.
Solar Power Plants may cause reflection and glare effects on panels due to direct sunlight or a bright sky. The intensity of these effects depends on the season, geographical location, and proximity to potential reception points such as residential areas and transportation routes. To mitigate possible issues, areas with a reflection risk should be identified, and visual screens can be applied at specific points based on visual monitoring and complaints from nearby settlements in the first year of operation.
The fact that the SPP sub-project to be built in Kadirli will be completed in a short period of 8 months, has resulted in the significance level of most of these impacts being low or moderate. In addition, the absence of cultural heritage and living population in the area and no need for expropriation of the land are at a low level in terms of social impacts.
All details related to environmental and social screening are given in Annex 11.

3. Legal and Institutional Framework

National Legal Framework

The WB's environmental and social safeguards policies require that the borrower country is expected to prepare an Environmental and Social Management Framework (ESMF), integrated with the Regulation on Environmental Impact Assessment (henceforth "EIA Regulation") (Official Gazette No. *31907*, July 29, 2022) and WB's Operational Policies. Although the Turkish EIA Regulation does not entirely meet the requirements of international standards in terms of social impacts, there are some legal arrangements for managing several social impacts. In this respect, the following are identified to be a non-exhaustive list of social legal framework applicable for this project:

- Labor Law (No. 4857), published in the Official Gazette no. 25134 dated 10 June 2003
- Law on Occupational Health and Safety (No. 6331), published in the Official Gazette no. 28339 dated 30 June 2012
- Regulation on Contractors and Sub-contractors, published in the Official Gazette no. 27010 dated 27 September 2008

In terms of involuntary resettlement, the relevant legal arrangements of Turkey are summarized below:

- Law No. 6203Expropriation Law, published in the Official Gazette no. 18215 dated 8 November 1983

Potential impact of the project on known cultural values in Turkish laws, as listed below:

- Law No. 2863 dated 21.07.1983 on the Protection of Cultural and Natural Assets (revised through the amendment issued on 27.07.2004 dated Official Gazette)
- The Regulation on Researches, Drillings and Excavations in Relation to the Cultural and Natural Assets, which was published in the Official Gazette No. 18485 dated 10.08.1994

Labor and Working Conditions:

- Human Resource Policy (dated January 4, 2013 in the Official Gazette numbered 28518) published by ILBANK
- Eligibility Criteria: The Law on Regulating Public Finance and Debt Management (Law No. 4749) restricts borrowing by any institution/municipality if it has overdue payments to Treasury.

In terms of stakeholder analysis:

- The Law on the Right to Information, Law no. 4982 dated November 25, 2014)
- The Law on the use of the Right to Petition, Law no. 3071 dated November 1, 1984
- The Law on the Protection of Personal, Law no. 6698 dated 24 March, 2016

Moreover, the project is the subject of the 30th clause of the "Regulation on Unlicensed Electricity Generation in the Electricity Market", published by the Energy Market Regulatory Authority no. 30772 on May 12, 2019 and amendment published on Official Gazette No: 31479 dated May 09, 2021, updated on Official Gazette No: 31920 dated August 11,2022, final update on Official Gazette No: 32120 dated March 02,2023. Article 1st Paragraph: " In order to meet the electricity needs of the consumption facilities, not exceeding the contractual power of the relevant consumption facilities in the connection agreement; Within the scope of subparagraph (h) of the first paragraph of Article 5, a production facility based on renewable energy sources may be established. Within the scope of this article, a production facility based on renewable energy sources may be established by public institutions and organizations within the scope of subparagraph (c) of the first paragraph of Article 5."

Section 26 of the same regulation. In paragraph 30-(3) under the heading "Applications for consumption needs", referring to the article, it reads: "In the production facilities established within the scope of this article, transactions are established within the scope of the fourth paragraph of Article 26 for surplus energy supplied to the grid during each billing period.

It is possible to explain offsetting as comparing the energy consumed monthly and the energy produced by the power plant and if there is excess production, selling this excess energy to the grid. The energy supplied to the network is sold at the unit price at which the subscriber receives the electricity, without considering the distribution price, also this sale is subject to tax.

Since the power plant to be established meets a small part of the municipality's consumption, no sales will take place. The municipality will continue to invest in this regard.

According to the regulation that entered into force on 11.08.2022, if the new power plants to be established in 2019 and after having made additional production at a value above the total amount of energy they consumed last year, this additional production will be given to the grid, free of charge. For example, if the consumer consumed 1 MWh of electricity last year and the solar power plant generates more than 1 MWh of excess energy (which means the energy after the consumption of consumer), up to 1 MWh the energy can be sold to the grid and if the produced energy exceeds 2 MWh (1 MWh for consumption and 1 MWh for sale), excess energy will be given to the grid free of charge.

Indirect and direct government incentives for solar power plants include:

- Article 24 of the Regulation on Unlicensed Electricity Generation in the Electricity Market (official newspaper no. 30772 dated May 12, 2019). It is stated that the surplus productions of Solar Power Plant will be purchased for 10 years at the price determined by the supply company by applying within the scope of 5c of the same regulation with the regulation in the article. The regulation's linking this purchase to a certain period is also considered an indirect incentive of the state.
- In addition, the fact that SPP applications based on self-consumption can be obtained in the same regulation is considered as an indirect incentive.

Laws, decrees and related legislations on which SPP installation and the feasibility are based;

- Law:
    - Electricity Market, Law no. 6446 dated 14 March, 2013

    - Environmental Law, Law No: 2872; Date of Ratification: 1983
- Decree:
    - President's Decision, Number of Decision 1044 (10.05.2019/30770)
- Regulation:
    - Regulation on Unlicensed Electricity Generation in the Electricity Market dated 12/5/2019 and numbered 30772 amendment published on Official Gazette No: 31479 dated May 09, 2021, updated on Official Gazette No: 31920 dated August 11,2022, final update on Official Gazette No: 32120 dated March 02,2023

International Legal Framework

The Environmental, Health, and Safety (EHS) Guidelines are technical reference documents of World Bank. When one or more members of the World Bank Group are involved in a project, these EHS Guidelines are applied as required by their respective policies and standards. These General EHS Guidelines are designed to be used together with the relevant Industry Sector EHS Guidelines which provide guidance to users on EHS issues in specific industry sectors. The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. Application of the EHS Guidelines to existing facilities may involve the establishment of site-specific targets, with an appropriate timetable for achieving them. It is mandatory to comply with the EHS Guidelines in the ESMP prepared for this subproject, which is planned to be realized with World Bank financing. Besides, other mandatory international legal framework listed as:

- Operational Policies of World Bank (OP 4.01)
- 2010 Policy on Access to Information (for stakeholder analysis)
- Good Practice Note (GPN) on Addressing Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) (for stakeholder analysis)
- European Union Environment Policy
- ILO conventions

4. Baseline Data

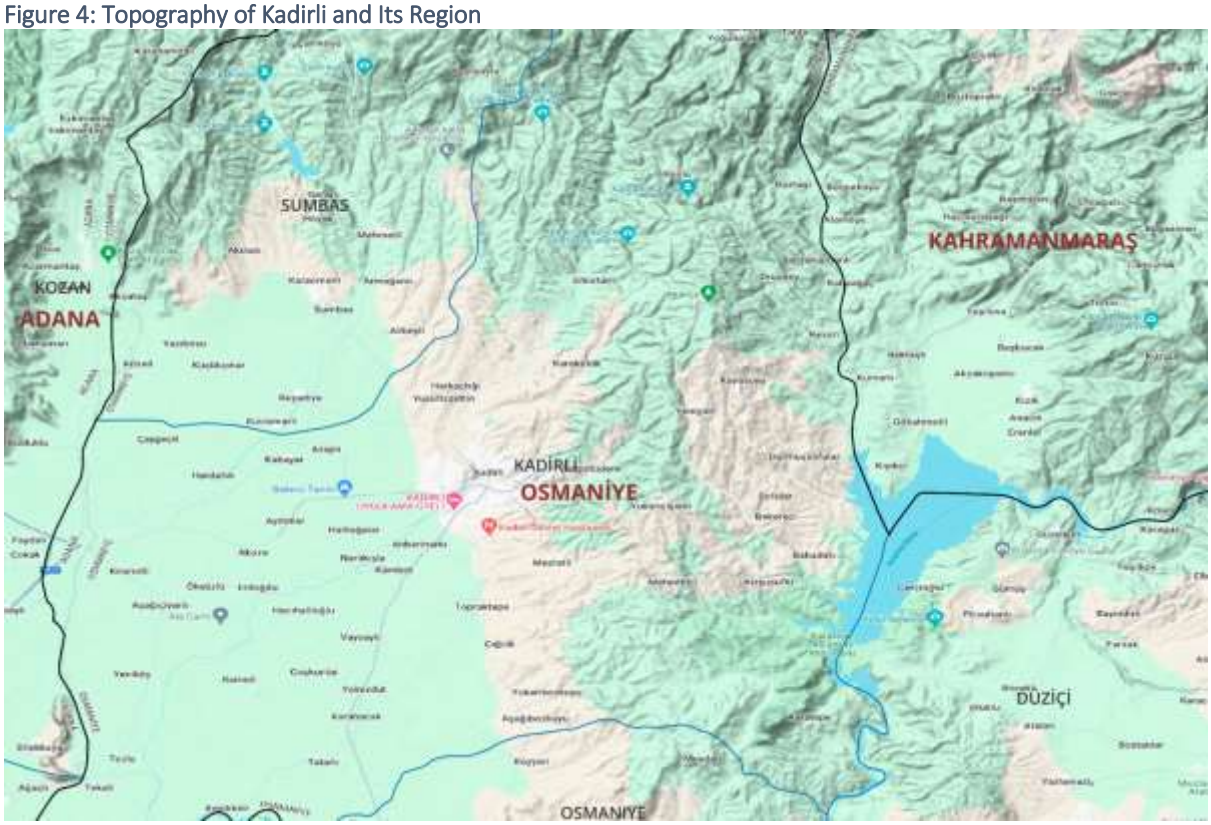
Environmental Baseline

Geography

The lands in the district are predominantly characterized by geomorphological features such as steep, hilly, and high areas. These areas are mainly located to the north, northeast, east, and southeast of the entire district. Due to the high groundwater levels in the alluvial-based plain unit, the initial settlement areas in the district were mostly established on high, steep, and hilly terrains. As the plain areas became available for settlement later on, approximately 49% of the settlements in the district are now concentrated here.

Kadirli Plain, located in the study area, is a large morphographic unit extending from southwest to northeast, with relatively increasing elevation, and with high agricultural potential. These areas constitute the plain unit of the district, which has the highest agricultural potential and can produce more than one crop per year.

Figure 4: Topography of Kadirli and Its Region



Climate

Kadirli is located in a transition zone between the Mediterranean climate and the Central Anatolian climate . Therefore, terrestrial effects are more pronounced in the district. Summers can be hot and dry, and winters can be cold and rainy. The spring and autumn seasons are generally milder. In winter, cold waves can be experienced with occasional rainfall.

The project area and its vicinity exhibits the effects of the typical Mediterranean climate alongside the influence of the orientation, elevation, and topography of the Middle Taurus Mountains, resulting in transitional Mediterranean and mountainous Mediterranean climate types. In a typical Mediterranean climate, summers are hot and dry, while winters are mild and rainy. The presence of two distinct seasons, such as summer and winter, due to climatic features in the district, has allowed for the cultivation of various agricultural products, supporting year-round agricultural activities.

In the research area, the angles of solar rays are approximately 29° 03' on December 21 in winter, 52° 30' on March 21 and September 23 in the spring, and 75° 57' on June 21 in summer. There is an approximate 47° difference in the angles of solar rays between summer and winter. This difference is significant as it reflects the variation in energy received from the sun between seasons, which is a key factor contributing to the occurrence of intense summer heat and mild winters. This situation is undoubtedly one of the most significant reasons for the high summer temperatures in the region. Therefore, the climatic conditions in Kadirli district provide a suitable environment for the Solar Power Plant project.

Figure 5: Sun incidence angles for seasons

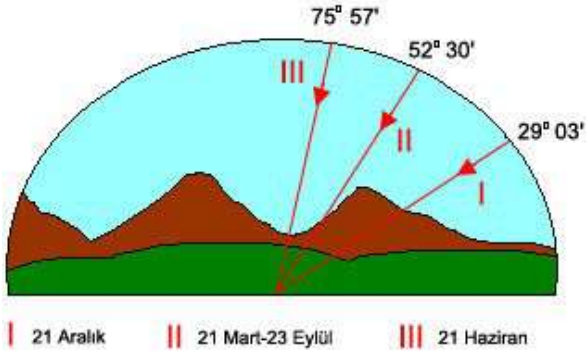
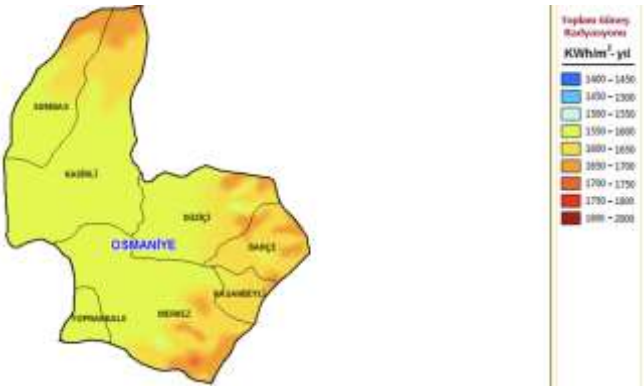


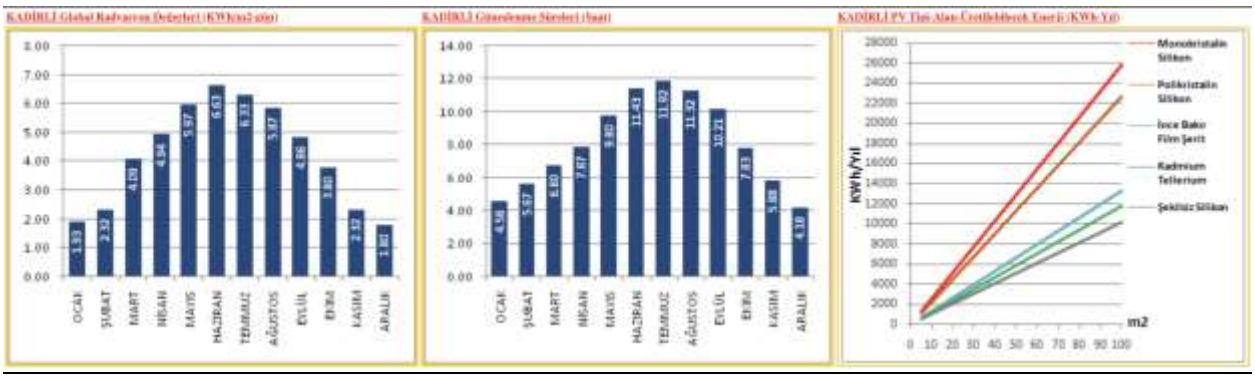
Figure 6: Osmaniye Province Solar Atlas



However, surrounded by two major morphological units, namely the Middle Taurus and Nur Mountains from the north and east, Kadirli is sheltered from the cold winter conditions prevalent in the inland regions. The average temperature in the district is 9.8°C in the winter, and temperatures rarely fall below 8°C, with frost events being very rare except for cooling air currents that cause frost events for a few days.

Osmaniye is one of the most suitable provinces in the south for solar power plants. According to the Solar Energy Potential Atlas, Turkey's average annual total sunshine duration is 2,737 hours, daily total is 7.5 hours, and annual total incoming solar energy is 1,527 kWh/m2/year (Figure 6). For Osmaniye, located in the south of Turkey, the total annual sunshine duration is 2,956.5 hours, the daily total is 8.1 hours, and the annual total incoming solar energy is 1,650 kWh/m2/year, which is above Turkey's averages. When these values are examined specifically for Kadirli district, they show very similar results to Osmaniye provincial averages (Graphic 1). Kadirli is a suitable region for potential solar energy investments with its location and sunshine hours.

Graphic 1: a) Kadirli District Radiation Values b) Kadirli District Sunshine Times c) PV Type -Area-Energy That Can Be Produced



Vegetation

There is the formation of various plant belts in the region: "Lower Mediterranean Zone" from the plain floor to 750-1000 meters altitude, and "Mediterranean Mountain Zone" from 1000 meters to 2000 meters. Supalpine Region" is above 2000 meters. Krakos, Çukurova orchid and Some endemic plant species such as the Çukurova violet grow only in this region.There are tree species such as red pine, aleppo pine, larch, oak, cypress, gum tree, fir, cedar, juniper, beech, elm and alder in the forests and bush areas. However, in the SPP sub-project area does not have endemic plant species or tree species in Kadirli.

Kadirli Urban Area and Savrun Stream

Regarding hydrographic features, Savrun River is of significant importance for Kadirli District. The river originates from the inner parts of the Middle Taurus Mountains, entering the Kadirli region from the northeast. It meanders through the district, gathering strength from numerous tributaries along its path and progressively intensifying. As it flows southward, it widens its catchment basin, smoothing the rugged terrain, effectively reaching the plain floor. The river then flows into the Kadirli plain, dividing the district center into two opposite banks, where the Savrun and Cemal Paşa bridges connect the banks, enabling transportation and communication.

Savrun River is of significant importance in the economic and social life of the city. Its length, measuring 110 km, sees the highest flow during the spring season. The most densely populated areas in Kadirli are those around Savrun River (Figure 7). Looking at the annual flow rates of the river, the average flow rate is 8.056 m^3/s, the minimum is 0.460 m^3/s, and the maximum is 584 m^3/s. These hydrographic characteristics are vital for agricultural life in the region.

Figure 7: Savrun Stream and Kadirli Urban Area

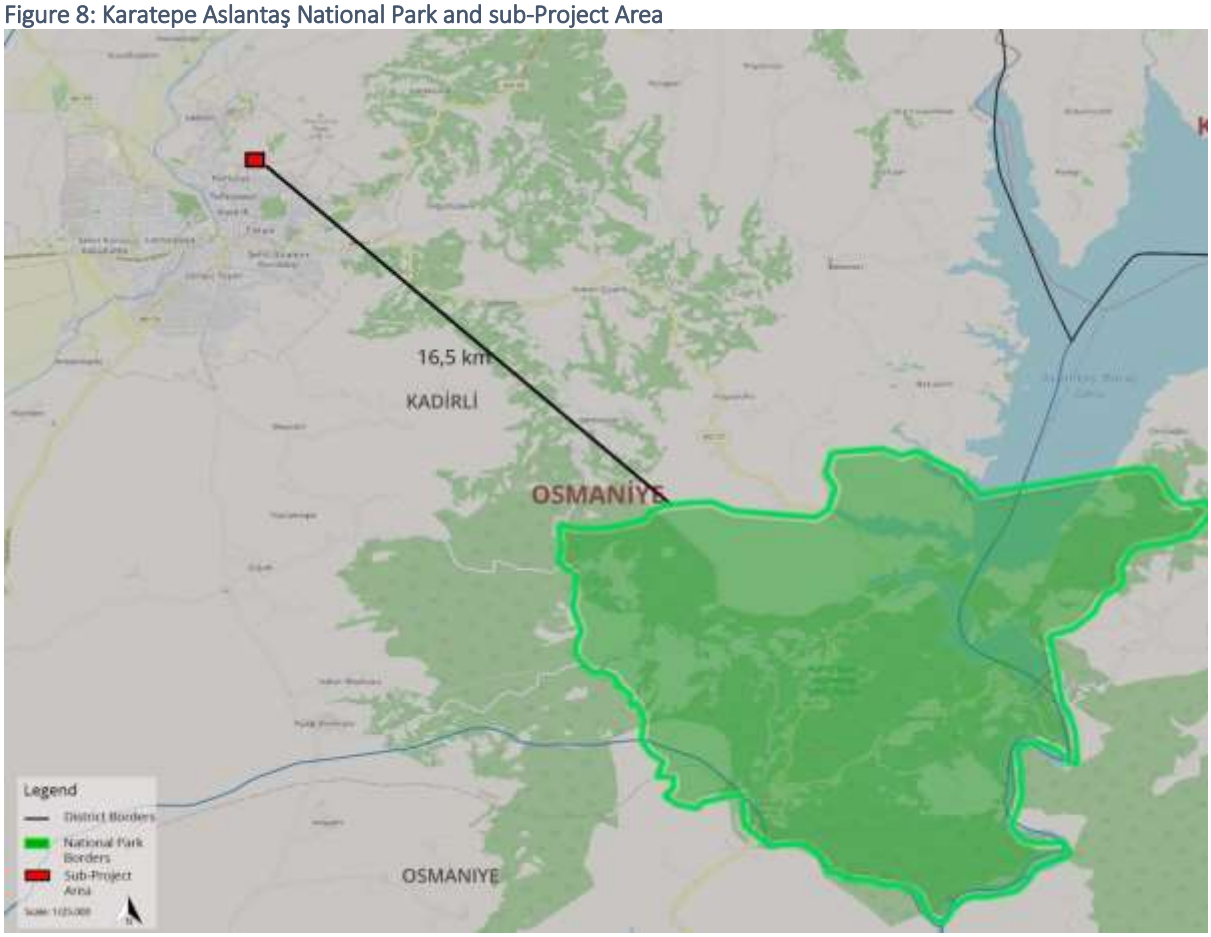
The area in which the Solar Power Plant (GES) project is situated within the Kadirli Urban Area. It is located right on the periphery of the urban macroform. This project does not have any adverse effects on the Savrun Stream and agricultural areas along it, which is 1.4 km away.

National Park and Its Natural and Cultural Values

The Ceyhan River, extending from the south to the east-west direction, enters the Çukurova region through Karatepe-Aslantaş National Park. Since the river is embedded in basalt cover in the Aslantaş National Park, The suitability of this area for dam construction was noted, and the Aslantaş Hydroelectric Power Plant was completed between 1975 and 1984. It was planned with a projected lifespan of 50 years, and it is anticipated that the hydroelectric potential of the dam can be utilized until 2034.

Considering the natural assets throughout the district as a whole, one of the most significant areas is the Karatepe Aslantaş National Park. The project area is approximately 16.5 km away from the Karatepe Aslantaş National Park, which is one of the most valuable assets in the district and requires the preservation natural heritage such as its biodiversity and cultural heritage such as Karatepe Aslantaş Archaeological Site which has essential role for Anatolian archaeology. This project does not have any adverse effects on this area, which is of paramount importance to the district.

Figure 8: Karatepe Aslantaş National Park and sub-Project Area



Earthquake Risks

Osmaniye is a city in the earthquake zone because it is in the Mediterranean region of Turkey, where there are fault lines that produce immense and destructive earthquakes. Turkey is a country with a high earthquake risk due to its location on important fault lines such as the North Anatolian Fault Line and the East Anatolian Fault Line. On the Richter scale, the lowest magnitude was 3.0 and the largest magnitude was 4.7. The project site has not seen an earthquake around 5 km shooting. Since the project site is not close to fault lines, it seems that the solar power project has a low probability of being affected by earthquakes. Necessary engineering measures, ground studies, planning and design studies will be carried out just in case.

The map obtained from Turkey Earthquake Hazard Maps Interactive Web Application shows that the earthquake risk in Kadirli is in the range of 0.8 g ≥ PGA ≥ 0.6 g, which indicates that the area is a 1st degree earthquake zone (Figure 10).

Figure 9: Faults in Kadirli and its Region, General Directorate of Mineral Research and Exploration (MTA)

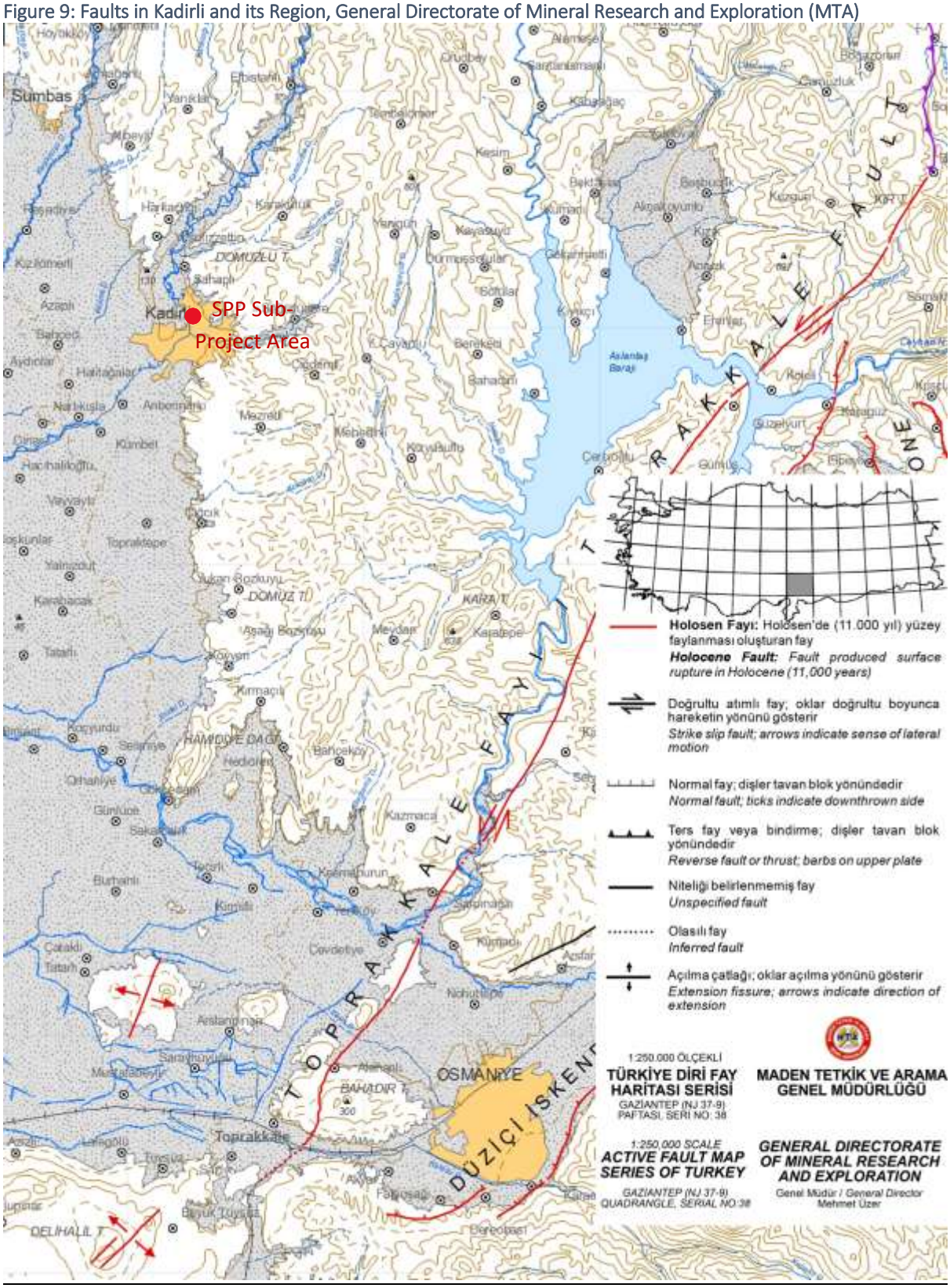
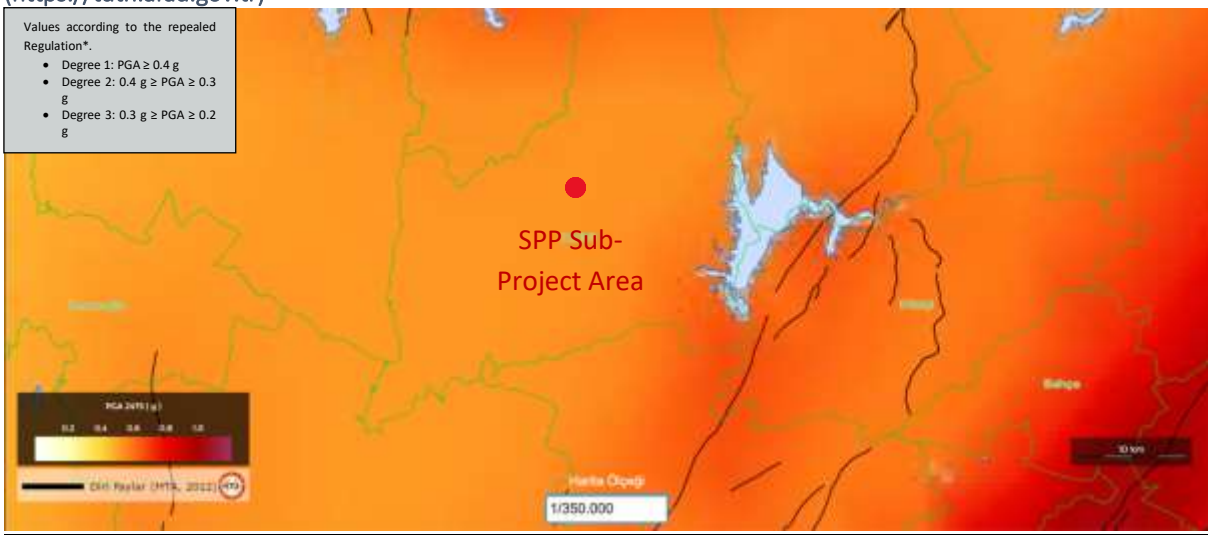


Figure 10: Earthquake Hazard Map of Kadirli, Türkiye Earthquake Hazard Maps Interactive Web Application, 2023, (https://tdth.afad.gov.tr)[1]



**Turkey Earthquake Zones Map, which came into force with the decision of the Council of Ministers dated 18.4.1996 and numbered 96/8109, was abolished on 01.01.2019. The New Turkey Earthquake Hazard Map and Building Earthquake Regulation was published in the Official Gazette No. 30364 on 18 March 2018 and entered into force on 01.01.2019.

Flood Risks

Floodplains are large areas in which water spreads out of the normal beds of rivers, streams and streams due to heavy rainfall or excessive water flow. Floodplains are designated areas to protect residential areas and agricultural areas by preventing water from getting out of control. These areas prevent flooding by allowing floodwater to spread and help drain water in a controlled manner.

Osmaniye is a province that is at risk of flooding due to its geographical location and local topography. Being under the influence of the Mediterranean climate may cause heavy rainfall from time to time. Mountainous areas and sloping surfaces can cause rainwater to quickly collect and flow in. However, factors such as infrastructure deficiencies, unplanned urbanization, and improper diversion of water can also increase the risk of flooding. However, it has been calculated that the risk of flooding is quite low in the location in Kadirli where the Solar Power Plant will be constructed (Figure 11 and Figure 12).

[1] Hazard map showing the PGA value created for a 10% probability of exceedance in 50 years (475 years of recurrence)

Figure 11: Flood Risk Map

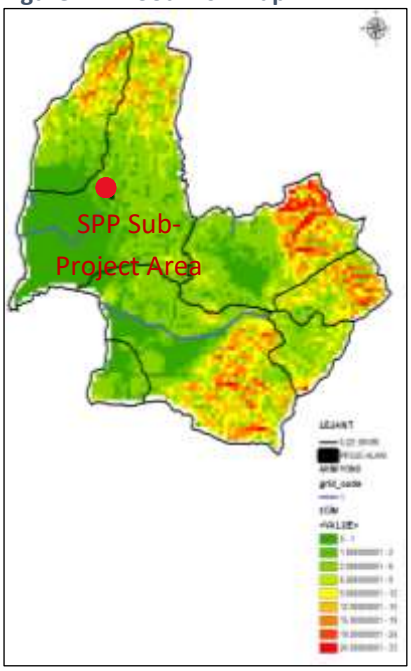
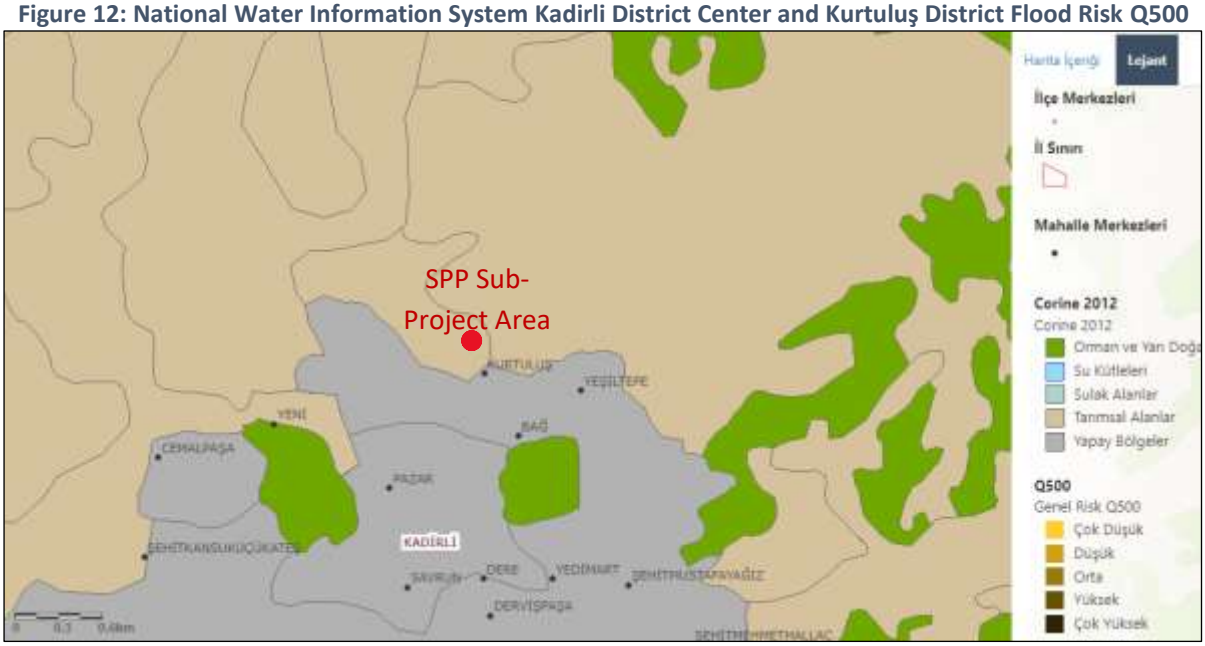


Figure 12: National Water Information System Kadirli District Center and Kurtuluş District Flood Risk Q500



Regulation on Preparation, Implementation, and Monitoring of Flood Management Plans in the Construction of Unlicensed Solar Power Plants" necessitates the consideration of flood risk during the construction of Unlicensed Solar Power Plants. According to the information obtained from the Ministry of Agriculture and Forestry, General Directorate of Water Management, it has been confirmed that there is no flood risk (Figure 12). In the National Water Information System prepared by the General Directorate of Water Management, the flood risk and danger in the SPP project area and its surroundings was examined at the Q500 level, and the assessment revealed the absence of any risk.

Social Baseline

Demography

The social structure of rural Kadirli can be analyzed in four distinct periods during the Republican era, each characterized by specific demographic trends:

1935-1940: Population Decline

During this period, there was a noticeable decrease in the rural population of Kadirli. Various socio-economic factors likely contributed to this decline.

1940-1965: Rapid Population Growth

Between 1940 and 1965, there was a significant and rapid increase in the rural population of Kadirli. This period of growth could be attributed to various factors, including improvements in agriculture and economic opportunities.

1965-1980: Stagnation

From 1965 to 1980, there was a period of population stagnation in rural Kadirli. The factors influencing this phase may include economic or social conditions that prevented further growth.

1980-2000 and more: Regular Decline

In the period between 1980 and 2000, there was a consistent decline in the rural population of Kadirli. This decline may be due to factors such as urbanization, migration to urban areas, or changes in the agricultural sector.

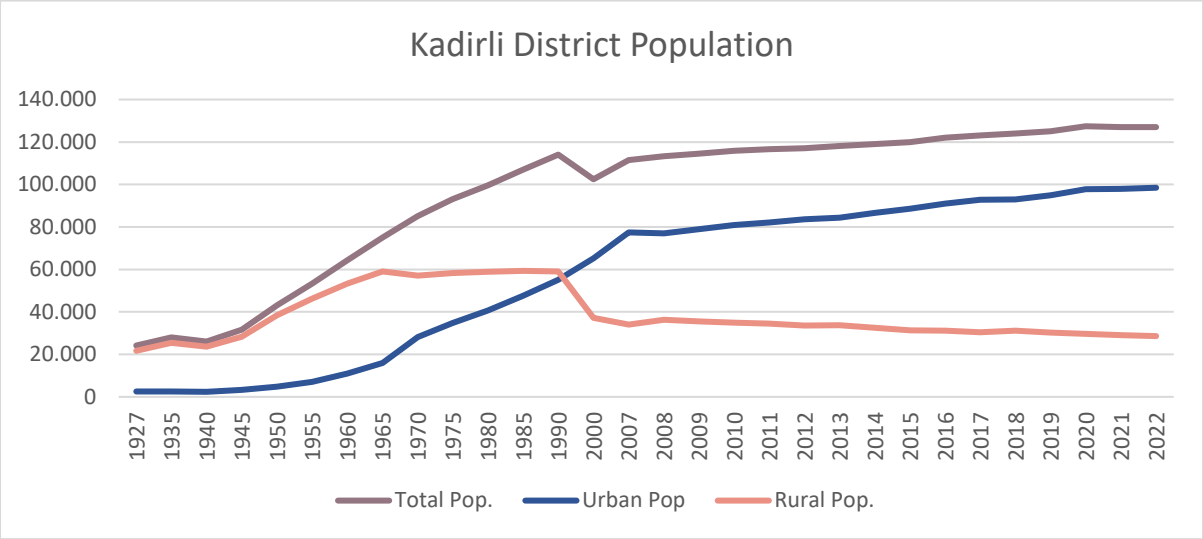
After 2000s

Due to the high number of immigrants from Kadirli mountain villages and some districts of Kahramanmaraş, it is seen that the urban population of the district has increased regularly since the early 2000s, and the rural population has decreased regularly.

Table 3: Kadirli District Population by Years (TÜİK, 2023)

Year	Total Pop.	Urban Pop	Rural Pop.	Year	Total Pop.	Urban Pop	Rural Pop.
Kadirli District (Adana)				Kadirli District (Osmaniye)			
1927	24.178	2.474	21.704	2000	102.417	65.227	37.190
1935	27.941	2.554	25.387	2007	111.455	77.379	34.076
1940	26.013	2.368	23.645	2008	113.236	76.976	36.260
1945	31.670	3.345	28.325	2009	114.476	78.964	35.512
1950	43.144	4.751	38.393	2010	115.880	80.948	34.932
1955	53.342	7.122	46.220	2011	116.644	82.110	34.534
1960	64.259	10.964	53.295	2012	117.124	83.618	33.506
1965	74.979	15.926	59.053	2013	118.119	84.381	33.738
1970	85.139	28.109	57.030	2014	119.047	86.560	32.487
1975	93.033	34.779	58.254	2015	119.857	88.527	31.330
1980	99.517	40.643	58.874	2016	122.078	90.959	31.119
1985	106.938	47.609	59.329	2017	123.144	92.750	30.394
1990	114.091	55.061	59.030	2018	124.053	92.915	31.138
				2019	125.083	94.868	30.215
				2020	127.416	97.729	29.687
				2021	126.941	97.950	28991
				2022	127.004	98.469	28535

Graphic 2: Kadirli District Population by Years (TÜİK, 2023)



As you move from the city center to the periphery, there is a dispersion and dilution in the population distribution. Since the lands of the villages close to the district center are small, their populations are not large. On the other hand, villages that are relatively far from the center but located in the plain region have larger land areas and more population. In addition, the existence and accessibility of main roads connecting to these routes have significantly affected the population distribution in the plain. While the total population of Kadirli district was 111,455 people in 2007, it increased by approximately 14% and reached 127,004 people in 2022. The distribution of the district's total population by gender in 2022 is as follows (TUIK, 2023): 63,553 men (50.04%), 63,451 women (49.96%). In the same year, the population of the district center was 97,950 (48,784 men, 49,166 women). The total population of the towns/villages of the district is 28,991 (14,831 men, 14,160 women). The distribution of the population in Kadirli district center and villages according to gender and 0-14 and 15-64 age groups is similar to the distribution of gender and age groups in Turkey's provincial/town and village population. Accordingly, the young population has development potential.

However, on the other hand, the economy of Kadirli district is mainly based on agriculture, causing an increase in both the general population and the 65+ population. In 2021, the share of the population over the age of 65 in the total population of Kadirli was 11% and the share in the total village population was 18%. Societies are grouped into four categories according to the ratio of the 65+ population to the total population, and societies where the 65+ population ratio is over 10% are considered "Aged Societies". Accordingly, although the young population in the district is increasing, the population of Kadirli is considered as an elderly society. The main reason for this can be defined as out-migration. The fact that the GES project will create new employment areas has the potential to support the young population to stay in the district. By increasing the proportion of the young population in the total district population, it will also contribute to the decrease at the elderly age level of the society.

Economic Sectors and Facilities

Kadirli and its surroundings have favorable conditions for human settlement and population concentration in terms of topography, climate, soil, and water resources. The suitable climate and vast land resources in Kadirli have a significant influence on the local economy, with a large portion of the district's population engaged in agriculture. Therefore, the local economy is primarily based

on agricultural production, agricultural labor, agriculture-related services, government employment, and commercial activities. At the same time, one of the main justifications of the SPP project is to use clean energy in the wastewater treatment plant. It is possible to reuse clean water obtained with clean energy for agricultural purposes. Affordable and accessible clean water provision will be provided by the local government. This situation has the potential to contribute to increasing the amount and quality of production by reducing input costs in the agricultural sector in Kadirli district, where fertile agricultural lands are located.

Although there is tourism potential in the district and its surroundings (Karatepe Aslantas Museum, Kastabala Ancient City, Ala Mosque, Roman Baths, etc.), it has not been adequately promoted, resulting in limited development in this area. however there are accommodation facilities for qualified tourism supply in Osmaniye City Center and Kadirli districts, the Central district is at the forefront in terms of tourism. Sustainable tourism planning is needed in Kadirli district to make the potentials more visible and to develop accommodation and similar infrastructures in the future.

In recent years, the establishment of an Organized Industrial Zone in the district has led to new developments. Kadirli Organized Industrial Zone was established in 1997. In Kadirli OIZ, while mostly small and local investors took part in the first stage, larger investors with a higher success rate took part in the second stage. Companies in the region operate in sectors such as food, textile, metal, building materials, furniture, machinery manufacturing and marble. The establishment of the Kadirli Organized Industrial Zone in recent years has signified the district's commitment to industrial growth. The implementation of the solar power plant (SPP) project offers a significant advantage to this industrial development initiative. The availability of sustainable and clean energy provided by the SPP project can create a model for reliable energy supply for industries operating in various sectors and set an examplefor the spread of clean energy in the district. This not only increases the energy security of existing industries, but also creates an attractive environment for potential investors in the industrial sector. The SPP project can strengthen the competitiveness and long-term sustainability of Kadirli's industrial activities by providing a stable and environmentally friendly energy source.

5. Environmental and Social Management Plan

Mitigation Plan for the Land Preparation, Construction and Operation Phases of the Project

Table 4: Mitigation Plan for the Land Preparation, Construction and Operation Phases of the Project

Phase Impact and Likelihood (1-5)	**Risk Description**	**Mitigation Measures**	**Responsibility**	**Key Performance Indicators**	**Cost**
Land Preparation Phase I = 2 L = 4	· Risk 1: Stripping of the Vegetative Topsoil Layer and Soil Compaction	· Implement re-vegetation plans using native species. · Application of organic soil conditioners to restore soil fertility. · Adjust construction equipment to minimize soil compaction. · Implement proper construction techniques and compaction control.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Visual observations ESMR Findings	Included in the subproject budget
Operational Phase I = 0 L =0	· Risk 1: Stripping of the Vegetative Topsoil Layer and Soil Compaction	· The provisions of the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes will be complied to.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Visual observations ESMR Findings	Included in the subproject budget
Constructional Phase I = 3 L = 1	· Risk 2: Leakage of Contaminants into the Soil and Waste and Chemical Storage	· Develop spill response and cleanup procedures. · Provide spill containment kits at refueling areas. · Implement proper storage practices for waste and chemicals. · Install secondary containment systems.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Visual observations ESMR Findings	Included in the subproject budget
Operational Phase I = 0 L =0	· Risk 2: Leakage of Contaminants into the Soil and Waste and Chemical Storage	· Wastes generated should only be temporarily stored on site in the temporary storage area that is maintained/equipped with appropriate precautions according to the type of wastes, when needed, and wastes should be transported to licensed disposal facilities with licensed transport vehicles appropriate to the type of waste. Information related to the operations in this context should be recorded and records should be kept.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Visual observations ESMR Findings	Included in the subproject budget
Constructional Phase I = 2 L = 4	Risk 3: Noise Resulting from Temporary Traffic Load Noise Caused by Construction Vehicles and Equipment Blasting, Stone, and Rock Removal · Vibration Effects	· Implement traffic management plans to reduce congestion and optimize routes; use noise barriers, if necessary, to reduce noise propagation · Schedule noisy construction activities during the daytime; Equip vehicles and machinery with noise-reduction technologies. · Ensure blasting and rock removal are performed during permitted hours; Implement vibration dampening measures by using isolation mounts, tuned mass dampers, shock absorbers. · Set vibration limits for construction activities. · Notify and compensate affected property owners for any damage	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Traffic Grievance Records Visual observations (such as traffic signs and warnings are placed at appropriate locations) ESMR Findings	Included in the subproject budget
Operational Phase	Risk 3:	· Restricting works during daytime (e.g. 7AM to 5PM).	Kadirli Municipality/PIU	Traffic Grievance	Included in the

Phase Impact and Likelihood (1-5)	Risk Description	Mitigation Measures	Responsibility	Key Performance Indicators	Cost
I = 0 L =0	Noise Resulting from Temporary Traffic Load Noise Caused by Construction Vehicles and Equipment Blasting, Stone, and Rock Removal .		Contractor and/or subcontractor Supervision Consultant	Records Visual observations (such as traffic signs and warnings are placed at appropriate locations) ESMR Findings	subproject budget
Constructional Phase I = 3 L = 4	· Risk 4: Dust and Exhaust Emissions from Soil Excavation, Vehicle Traffic and Equipment	· Implement dust control measures, such as watering construction areas. · Use dust screens or barriers to prevent dust dispersion. · Use dust screens or barriers to prevent dust dispersion. · Promote the use of eco-friendly construction equipment. · Pave or stabilize dirt roads to reduce dust emissions. · Enforce speed limits to minimize dust generation. · Maintain vehicles to reduce emissions. · Use low-emission or electric vehicles whenever possible. · Encourage the adoption of clean fuel options. · Develop an emissions control and reporting program.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Traffic Grievance Records Visual observations (such as traffic signs and warnings are placed at appropriate locations) ESMR Findings	Included in the subproject budget
Operational Phase I = 0 L =0	· Risk 4: Dust and Exhaust Emissions from Soil Excavation, Vehicle Traffic and Equipment	· Disposing of excess material and cleaning the location upon the finalization of works.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Traffic Grievance Records Visual observations (such as traffic signs and warnings are placed at appropriate locations) ESMR Findings	Included in the subproject budget

Phase Impact and Likelihood (1-5)	Risk Description	Mitigation Measures	Responsibility	Key Performance Indicators	Cost
Constructional Phase I = 2 L = 2	Risk 5: Temporary Blockage of Transportation Roads between Settlements Traffic Vehicles Cause Destruction on Roads and Buildings .	· Plan construction schedules to minimize road closures. · Provide alternative routes for affected communities. · Communicate road closures in advance to residents. · Employ regular road maintenance and repair. · Ensure construction vehicle operators follow road safety guidelines.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Traffic Grievance Records Visual observations (such as traffic signs and warnings are placed at appropriate locations) ESMR Findings	Included in the subproject budget
Operational Phase I = 0 L =0	Risk 5: Temporary Blockage of Transportation Roads between Settlements · Traffic Vehicles Cause Destruction on Roads and Buildings	· Positioning clear warning and information signs around the construction zone. Imposing time constraints (e.g. 7AM to 5PM) for works. Considering disabled, women, children and people with special needs while locating and marking alternative roads (roundabouts)	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Traffic Grievance Records Visual observations (such as traffic signs and warnings are placed at appropriate locations) ESMR Findings	Included in the subproject budget
Constructional Phase I = 3 L = 1	Risk 6: · Chemical Spills and Leaks · Improper Storage and Disposal of Materials · Inadequate Stormwater Management · Inadequate Hazardous Material Handling	· Establish safe delivery/storage/handling procedures in accordance with material safety data sheets (MSDSs) Immediately contain and clean-up any spilled material.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Visual observations ESMR Findings	Included in the subproject budget
Operational Phase	Risk 6:	· Wastes generated should only be temporarily stored on site in	Kadirli Municipality/PIU	Visual	Included in the

Phase Impact and Likelihood (1-5)	Risk Description	Mitigation Measures	Responsibility	Key Performance Indicators	Cost
I = 0 L =0	· Chemical Spills and Leaks · Improper Storage and Disposal of Materials · Inadequate Stormwater Management · Inadequate Hazardous Material Handling	the temporary storage area that is maintained/equipped with appropriate precautions according to the type of wastes, when needed, and wastes should be transported to licensed disposal facilities with licensed transport vehicles appropriate to the type of waste. Information related to the operations in this context should be recorded and records should be kept. · Develop Disposal of Waste PV Modules Management Plan · Develop Recycling of Project Equipment/Materials Management Plan	Contractor and/or subcontractor Supervision Consultant	observations ESMR Findings	subproject budget
Constructional Phase I = 1 L=1	Risk 7: · Fragmentation of forest habitats, · Loss of nesting grounds and/or high biodiversity/sensitive habitats of rare, threatened, or endangered species, · Placing obstacles to wildlife movement	· Minimizing the areas requiring the removal of vegetation. Special measures if needed to avoid damage to protected trees or species.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Visual observations ESMR Findings	Included in the subproject budget
Operational Phase I=0 L=0	Risk 7: · Fragmentation of forest habitats, · Loss of nesting grounds and/or high biodiversity/sensitive habitats of rare, threatened, or endangered species, · Placing obstacles to wildlife movement	· Monitoring the areas requiring the removal of vegetation.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Visual observations ESMR Findings	Included in the subproject budget
Constructional Phase I = 3 L=3	· Risk 8: Reflection and Glare Effect	· Establish criteria or thresholds that, when exceeded, trigger the need for mitigation measures. For example, if glare affects specific areas or receptor points significantly, mitigation measures should be initiated.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Visual observations ESMR Findings	Included in the subproject budget

Phase Impact and Likelihood (1-5)	Risk Description	Mitigation Measures	Responsibility	Key Performance Indicators	Cost
Operational Phase I=3 L=3	· Risk 8: Reflection and Glare Effect	· Develop a detailed procedure for monitoring glare and reflection, including responsibilities, schedules, and data collection methods and regularly report the findings and progress of glare and reflection control measures. · Design of project area according to flight routes.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Visual observations ESMR Findings	Included in the subproject budget
Constructional Phase I = 1 L=1	· Risk 9: The possibility of discovering artifacts or other cultural and historical items of value.	· Discontinuing all works. Contact responsible authorities. Organizing all necessary measures to protect the location. No works to proceed until official notification is received. · Chance Finds Procedures will be prepared prior to construction works.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant Osmaniye Museum	Visual observations	Included in the subproject budget
Operational Phase I=0 L=0	· Risk 9: The possibility of discovering artifacts or other cultural and historical items of value.	· If artifacts are found during the construction phase, all works will be stopped, and the works for the facility will be restarted when the Museum gives permission for the continuation of the works. · Monitoring regularly by the Museum in the operational phase	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant Osmaniye Museum	Visual observations	Included in the subproject budget
Constructional Phase I = 4 L=1	· Risk 10: Effects on Workforce and OHS	· Shaping early detection mechanisms based on results of monitoring measures, · Legal and regular training, · Utilization of occupational health and safety equipment, · Regular worker health checks, · OHS Site management Plan, · Risk Assessment, · Emergency Plan · Control of working hours and work permits, · Regular safety inspections.	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Sub-contractor Agreements Grievance Records ESMR Findings	Included in the subproject budget
Operational Phase I=4 L=1	· Risk 10: Effects on Workforce and OHS	· For sub-projects that may have labor influx issues, camp sites should be arranged to properly accommodate workers and meet their needs within the camp site. Workers must be provided with relevant trainings as needed. Workers will sign and receive a training on the Code of Conduct. Nearby communities will be consulted regarding the locations of the work camp. · Develop Labor Management Plan	Kadirli Municipality/PIU Contractor and/or subcontractor Supervision Consultant	Sub-contractor Agreements Grievance Records ESMR Findings	Included in the subproject budget

Monitoring Plan for the Land Preparation, Construction and Operation Phases of the Project

Table 5: Monitoring Plan for the Land Preparation, Construction and Operation Phases of the Project

Phase Impact and Likelihood (1-5)	**Risk Description**	**Monitoring Measures**	**Parameters**	**Method**	**Sampling Locations**	**Frequency**	**Detection Limits**
Land Preparation Phase I = 2 L = 4	Risk 1: Stripping of the Vegetative Topsoil Layer and Soil Compaction	· Analysis organic matter content and compaction levels of soil in the project site regularly.	· Soil Organic Matter Content Soil compaction levels	· Sampling and laboratory analysis · Soil compaction tests	· Project site · Areas with construction and traffic intensity	· Before and after topsoil stripping · Periodic checks during and after construction	· Any significant decrease in soil organic matter content · Soil compaction beyond allowable limits
Constructional Phase I = 3 L = 1	Risk 2: Leakage of Contaminants into the Soil and Waste and Chemical Storage	· Analysis contaminants and waste in the soil of the project site regularly.	· Presence of oil, lubricants, or fuels in soil. · Soil leachate quality.	· Visual inspection, soil sampling, and chemical analysis. · Regular sampling and analysis of leachate.	· Areas near equipment refueling stations and vehicle storage. · Near waste and chemical storage areas	· Regular checks during refueling and maintenance	· Presence of contaminants
Operational Phase I = 0 L =0	Risk 2: Leakage of Contaminants into the Soil and Waste and Chemical Storage	· Analysis contaminants and waste in the soil of the project site regularly.	· Presence of oil, lubricants, or fuels in soil. · Soil leachate quality.	· Visual inspection, soil sampling, and chemical analysis. · Regular sampling and analysis of leachate.	· Areas near equipment refueling stations and vehicle storage. · Near waste and chemical storage areas	· Regular checks during refueling and maintenance	· Presence of contaminants
Constructional Phase I = 2 L = 4	Risk 3: Noise Resulting from Temporary Traffic Load Noise Caused by Construction Vehicles and Equipment Blasting, Stone, and Rock Removal Vibration Effects	· Conduct periodic sound level measurements at key locations in areas with traffic during construction. · Regularly measure noise levels during equipment operation in areas with equipment activities. · Continuously monitor vibration and noise levels during blasting operations	· Noise levels generated by traffic. · Noise levels generated by traffic. · Vibration levels and noise from blasting · Structural and superficial damage from vibrations	· Sound level measurement · Vibration and noise measurements during blasting operations · Visual inspections and structural assessments.	· Areas with traffic during construction · Areas with equipment operation. · Near blasting sites. · Buildings near construction areas.	· Periodic measurements during construction. · Continuous monitoring during blasting activities. · Regular structural assessments during construction.	· Noise levels exceeding acceptable limits. · Vibration and noise exceeding allowable levels. · Signs of structural or superficial damage.

Phase Impact and Likelihood (1-5)	Risk Description	Monitoring Measures	Parameters	Method	Sampling Locations	Frequency	Detection Limits
		near blasting sites.					
Operational Phase I = 0 L =0	Risk 3: Noise Resulting from Temporary Traffic Load Noise Caused by Construction Vehicles and Equipment Blasting, Stone, and Rock Removal Vibration Effects	· Conduct periodic sound level measurements at key locations in areas with traffic during construction. · Regularly measure noise levels during equipment operation in areas with equipment activities. · Continuously monitor vibration and noise levels during blasting operations near blasting sites.	· Noise levels generated by traffic. · Noise levels generated by traffic. · Vibration levels and noise from blasting · Structural and superficial damage from vibrations	· Sound level measurement · Vibration and noise measurements during blasting operations · Visual inspections and structural assessments. .	· Areas with traffic during construction · Areas with equipment operation. · Near blasting sites. · Buildings near construction areas.	· Periodic measurements during construction. · Continuous monitoring during blasting activities. · Regular structural assessments during construction. .	· Noise levels exceeding acceptable limits. · Vibration and noise exceeding allowable levels. · Signs of structural or superficial damage. .
Constructional Phase I = 3 L = 4	Risk 4: Dust and Exhaust Emissions from Soil Excavation, Vehicle Traffic and Equipment	· Continuous measurement of dust concentration and particulate matter (PM) emissions using air quality monitoring equipment in construction areas with soil excavation. · Periodic air quality measurements along traffic routes in traffic-prone areas within the site. · Periodic emission measurements from the exhaust systems of vehicles and construction equipment in vehicle operation areas.	· Dust concentration and particulate matter (PM) emissions. · Dust concentration and particulate matter (PM) emissions. · Emissions from vehicles and construction equipment.	· Dust concentration measurements using air quality monitoring equipment. · Air quality measurements along traffic routes. · Emission measurements from the exhaust systems	· Construction areas with soil excavation · Traffic-prone areas within the site · Vehicle operation areas	· Continuous monitoring during excavation activities · Periodic measurements during project activities · Periodic emissions testing during construction and operation	· Dust levels exceeding acceptable thresholds. · Emissions exceeding permissible levels
Operational Phase I = 0 L =0	Risk 4: Dust and Exhaust Emissions from Soil Excavation, Vehicle Traffic and Equipment	· Continuous measurement of dust concentration and particulate matter (PM) emissions using air quality monitoring equipment in construction areas with soil	· Dust concentration and particulate matter (PM) emissions. · Dust concentration and particulate	· Dust concentration measurements using air quality monitoring equipment. · Air quality	· Construction areas with soil excavation · Traffic-prone areas within the site · Vehicle operation areas	· Continuous monitoring during excavation activities · Periodic measurements	· Dust levels exceeding acceptable thresholds. · Emissions exceeding permissible levels

Phase Impact and Likelihood (1-5)	Risk Description	Monitoring Measures	Parameters	Method	Sampling Locations	Frequency	Detection Limits
		excavation. · Periodic air quality measurements along traffic routes in traffic-prone areas within the site. · Periodic emission measurements from the exhaust systems of vehicles and construction equipment in vehicle operation areas.	matter (PM) emissions. · Emissions from vehicles and construction equipment.	measurements along traffic routes. · Emission measurements from the exhaust systems		during project activities · Periodic emissions testing during construction and operation	
Constructional Phase I = 2 L = 2	Risk 5: Temporary Blockage of Transportation Roads between Settlements Traffic Vehicles Cause Destruction on Roads and Buildings	· Analyzing road blockages, duration, and frequency through real-time assessments of transportation routes. · Analyzing damages to roads and buildings by conducting periodic visual assessments in areas where construction vehicles operate.	· Road blockages, duration, and frequency. · Damage to roads and buildings	· Record road closure incidents and duration. · Visual inspections, documenting damages.	· Vehicle operation areas. · Transportation routes. · Areas where construction vehicles operate.	· Periodic emissions testing during construction and operation. · Real-time monitoring of road conditions. · Periodic visual assessments	· Road closures exceeding acceptable frequency. · Occurrence of damages to roads and buildings beyond permissible levels.
Operational Phase I = 0 L =0	Risk 5: Temporary Blockage of Transportation Roads between Settlements Traffic Vehicles Cause Destruction on Roads and Buildings	· Analyzing road blockages, duration, and frequency through real-time assessments of transportation routes. · Analyzing damages to roads and buildings by conducting periodic visual assessments in areas where construction vehicles operate.	· Road blockages, duration, and frequency. · Damage to roads and buildings	· Record road closure incidents and duration. · Visual inspections, documenting damages.	· Vehicle operation areas. · Transportation routes. · Areas where construction vehicles operate.	· Periodic emissions testing during construction and operation. · Real-time monitoring of road conditions. · Periodic visual assessments	· Road closures exceeding acceptable frequency. · Occurrence of damages to roads and buildings beyond permissible levels.
Constructional Phase I = 3 L = 1	Risk 6: · Chemical Spills and Leaks · Improper Storage and Disposal of	· Establish a remote monitoring and control system to allow operators to assess chemical levels and respond to incidents	· Chemical concentrations	· Utilize remote monitoring technologies, such as sensors, meters, or Supervisory Control and Data Acquisition	· Place monitoring devices strategically in critical areas where chemicals are stored, handled, or processed	· Continuous real-time monitoring is essential for immediate detection of abnormal chemical	· limits should be set to detect concentrations that may pose risks, ensuring early detection and response.

Phase Impact and Likelihood (1-5)	Risk Description	Monitoring Measures	Parameters	Method	Sampling Locations	Frequency	Detection Limits
	Materials · Inadequate Stormwater Management · Inadequate Hazardous Material Handling			systems, to continuously measure and transmit real-time data on chemical concentrations		concentrations	
Operational Phase I = 0 L =0	Risk 6: · Chemical Spills and Leaks · Improper Storage and Disposal of Materials · Inadequate Stormwater Management Inadequate Hazardous Material Handling	· Establish a remote monitoring and control system to allow operators to assess chemical levels and respond to incidents	· Chemical concentrations	· Utilize remote monitoring technologies, such as sensors, meters, or Supervisory Control and Data Acquisition systems, to continuously measure and transmit real-time data on chemical concentrations	· Place monitoring devices strategically in critical areas where chemicals are stored, handled, or processed	· Continuous real-time monitoring is essential for immediate detection of abnormal chemical concentrations	· limits should be set to detect concentrations that may pose risks, ensuring early detection and response.
Constructional Phase I = 1 L=1	Risk 7: · Fragmentation of forest habitats, · Loss of nesting grounds and/or high biodiversity/sensitive habitats of rare, threatened, or endangered species, · Placing obstacles to wildlife movement	· Habitat Monitoring	· Wildlife Movement · the integrity of vegetation structure, including canopy cover and understory vegetation, to gauge habitat quality. ·	· Employ remote sensing technologies, such as satellite imagery and GIS (Geographic Information System), to analyze landscape patterns and changes over time. · Conduct on-the-ground surveys to assess vegetation structure and identify signs of habitat fragmentation	· Representative locations across the forested area, focusing on areas identified as potential fragmentation zones or areas with critical habitat connections. · core habitat areas, potential corridors, and areas around the forest periphery.	· Regular assessments throughout the year to capture seasonal variations	· Thresholds for beyond which fragmentation is considered a significant concern.

Phase Impact and Likelihood (1-5)	Risk Description	Monitoring Measures	Parameters	Method	Sampling Locations	Frequency	Detection Limits
Operational Phase I=0 L=0	Risk 7: · Fragmentation of forest habitats, · Loss of nesting grounds and/or high biodiversity/sensitive habitats of rare, threatened, or endangered species, Placing obstacles to wildlife movement	· Habitat Monitoring	· Wildlife Movement · the integrity of vegetation structure, including canopy cover and understory vegetation, to gauge habitat quality. ·	· Employ remote sensing technologies, such as satellite imagery and GIS (Geographic Information System), to analyze landscape patterns and changes over time. · Conduct on-the-ground surveys to assess vegetation structure and identify signs of habitat fragmentation	· Representative locations across the forested area, focusing on areas identified as potential fragmentation zones or areas with critical habitat connections. · core habitat areas, potential corridors, and areas around the forest periphery.	· Regular assessments throughout the year to capture seasonal variations	· Thresholds for beyond which fragmentation is considered a significant concern.
Constructional Phase I = 3 L=3	Risk 8: Reflection and Glare Effect	· Implement visual monitoring protocols to observe and record glare and reflection events. · Use specialized glare measurement tools to provide quantitative data. · Conduct monitoring during different times of the day and under various weather conditions to capture variations.	· The intensity and frequency of glare and reflection from the solar panels and surrounding areas and the times of the day, seasons, or specific weather conditions when glare and reflection effects are most pronounced.	· The intensity and frequency of glare and reflection from the solar panels and surrounding areas and the times of the day, seasons, or specific weather conditions when glare and reflection effects are most pronounced.	· The intensity and frequency of glare and reflection from the solar panels and surrounding areas.	· The intensity and frequency of glare and reflection from the solar panels and surrounding areas.	· Define specific detection limits that indicate the threshold beyond which glare and reflection effects become significant and may require corrective action.
Operational Phase I=3 L=3	Risk 8: Reflection and Glare Effect	· Implement visual monitoring protocols to observe and record glare and reflection events. · Use specialized glare measurement tools to provide quantitative data.	· The intensity and frequency of glare and reflection from the solar panels and surrounding areas and the times of the day, seasons, or	· The intensity and frequency of glare and reflection from the solar panels and surrounding areas and the times of the day, seasons, or	· The intensity and frequency of glare and reflection from the solar panels and surrounding areas.	· The intensity and frequency of glare and reflection from the solar panels and surrounding areas.	· Define specific detection limits that indicate the threshold beyond which glare and reflection effects become significant and may require corrective action.

Phase Impact and Likelihood (1-5)	Risk Description	Monitoring Measures	Parameters	Method	Sampling Locations	Frequency	Detection Limits
		· Conduct monitoring during different times of the day and under various weather conditions to capture variations.	specific weather conditions when glare and reflection effects are most pronounced.	specific weather conditions when glare and reflection effects are most pronounced.			
Constructional Phase I = 1 L=1	Risk 9: The possibility of discovering artifacts or other cultural and historical items of value.	· Coordinate with relevant regulatory authorities and heritage preservation agencies to ensure compliance with cultural heritage protection regulations	· Chance findings	· Coordination with the Museum affiliated to the Ministry.	· Project Site	· -	· Once a chance finding discovered
Operational Phase I=0 L=0	Risk 9: The possibility of discovering artifacts or other cultural and historical items of value.	· Coordinate with relevant regulatory authorities and heritage preservation agencies to ensure compliance with cultural heritage protection regulations	· Chance findings	· Coordination with the Museum affiliated to the Ministry.	· Project Site	· -	· Once a chance finding discovered
Constructional Phase I = 4 L=1	Risk 10: Effects on Workforce and OHS	· To establish an incident reporting system and encourage its use by employees for reporting and documenting workplace incidents, · Regular health assessments according to 6331 Law, its regulation and WB ESP to monitor employees' health conditions and facilitate prompt intervention or preventive measures for emerging health issues, · Periodically identifying factors contributing to	· Workforce health and safety indicators, including accident rates, workplace stress levels, and health-related incidents/ near misses, injuries, and safety violations/near misses, fire and environmental incidents/near misses	· Data collection through incident reports, health assessments, safety inspections, accident investigations and surveys	· Project site and areas where the workforce is most active and where with heavy equipment use	· Regular and ongoing monitoring during periods of intense construction and operation activities	· Define thresholds for incident rates and workforce stress levels that warrant corrective action

Phase Impact and Likelihood (1-5)	Risk Description	Monitoring Measures	Parameters	Method	Sampling Locations	Frequency	Detection Limits
		workplace stress and conducting workplace stress surveys to eliminate stressors, · Regular inspections by relevant regulatory authorities to identify potential hazards in the construction area and alleviate the physical and mental fatigue of workers during intensive construction periods, · Conducting emergency drills to ensure swift action in case of emergencies, and ensuring that all employees are familiar with evacuation procedures and emergency protocols, · Maintaining effective and transparent communication among employees, employers, and relevant stakeholders, establishing continuous communication channels for reporting any safety concerns or issues, · Monitoring and regulating working and break hours to prevent excessive fatigue, ensuring that employees take regular breaks.					
Operational Phase I=4	Risk 10: Effects on Workforce and OHS	· To establish an incident reporting system and encourage its use by	· Workforce health and safety indicators, including accident	· Data collection through incident reports, health	· Project site and areas where the workforce is most	· Regular and ongoing monitoring during	· Define thresholds for incident rates and workforce stress levels

Phase Impact and Likelihood (1-5)	Risk Description	Monitoring Measures	Parameters	Method	Sampling Locations	Frequency	Detection Limits
L=1		employees for reporting and documenting workplace incidents, · Regular health assessments according to 6331 Law, its regulation and WB ESP to monitor employees' health conditions and facilitate prompt intervention or preventive measures for emerging health issues, · Periodically identifying factors contributing to workplace stress and conducting workplace stress surveys to eliminate stressors, · Regular inspections by relevant regulatory authorities to identify potential hazards in the construction area and alleviate the physical and mental fatigue of workers during intensive construction periods, · Conducting emergency drills to ensure swift action in case of emergencies, and ensuring that all employees are familiar with evacuation procedures and emergency protocols, · Maintaining effective and transparent communication among employees,	rates, workplace stress levels, and health-related incidents/ near misses, injuries, and safety violations/near misses, fire and environmental incidents/near misses	assessments, safety inspections, accident investigations and surveys	active and where with heavy equipment use	periods of intense construction and operation activities	that warrant corrective action

Phase Impact and Likelihood (1-5)	Risk Description	Monitoring Measures	Parameters	Method	Sampling Locations	Frequency	Detection Limits
		employers, and relevant stakeholders, establishing continuous communication channels for reporting any safety concerns or issues, · Monitoring and regulating working and break hours to prevent excessive fatigue, ensuring that employees take regular breaks.					

Measures for Institutuional Arrangements, Capacity Development, and Training

In the context of the Sub-Project aiming to increase renewable energy production in the Kadirli district, institutional arrangements for managing environmental and social issues need to be established to ensure its implementation with minimized potential impacts. In the Environmental and Social Management Framework of the World Bank's Sustainable Cities Project-II Additional Financing (World Bank, 2019), ILBANK Project Management Unit (PYB), and the project owner municipalities are identified as key actors. Roles and capacities of actors should be defined, and necessary adjustments should be made for the effective implementation of sub-projects.For the SPP project to be constructed in the Kadirli district, the main actors are the World Bank, ILBANK, Kadirli Municipality, Contractor, Supervision Consultant, and E&S Consultant.

Kadirli Municipality

Renewable energy projects in Kadirli Municipality are managed by the Technical Works Directorate with a staff of three, including an environmental engineer, a civil engineer, and a land surveyor. There is currently no unit used as a complaint mechanism in Kadirli Municipality. According to the ESMP, the Technical Works Directorate, Research Project Directorate, Plan-Project Directorate, Headman Affairs, Human Resources and Training Directorate, and Culture and Social Affairs Directorate teams within the municipality should be involved in a Project Management Unit.

Table 6: Roles and Responsibilities of Main Actors of SPP Subproject

	Kadirli Municipality	ILBANK	WB	Contractor	Supervision Consultant	E&S Consultant
Financial Roles	Requestor	Financial intermediary	Main finance source			
Application Process	Submit Demand Based Applications	Review / analyze the applications in order to provide information to WB Prepare Kadirli Municipality's subproject documents in accordance with WB requirements,	Concur the final selection of eight participating municipalities.			
Preparation Process	Welcome and apply the relevant laws and regulations that are introduced by WB through ILBANK	Coordinate the selected municipalities to ensure all the relevant rules and regulations will be adopted throughout the project. Organize internal working structure for the investment options. Although the project site is in the low risk category, in case of need, Kadirli Municipality officials and consultants are guided on WB requirements (documents and procedures) regarding impact factors such as cultural assets, land acquisition and involuntary settlement, natural habitats, forests and	Assist ILBANK in Developing Performance and Monitoring Database system during the preparation phase. Provide technical guide for ILBANK. Implementation and inspection of the ESMP of the subproject and development of recommendations	Ensure compliance with all requirements of the ESMF and management plans. Ensure conformity with project standards and obtaining all relevant permits and licenses	Identify and managing environmental, social, and OHS-related risks	Preparing Environmental and Social Assessment Reports, i.e., ESMF and Resettlement Action Plans (and, if necessary, RAP/LRP), for approval by ILBANK and the World Bank.
Number of Staff	One Social and One Environmental Expert	In addition to present team, a support team can be established.	Assist ILBANK in establishing monitoring team.		Employe competent Environmental, Social, and OHS	

		Structure of the team and qualification of team members will be defined by ILBANK and WB. Individual freelance consultants can be employed.			Experts (at least one Social Expert, one Environmental Expert, and one OHS Expert) within the scope of the project	
Project Roles	Preparation of ESIA, ESMP and Grievance Mechanism	The main responsible for monitoring ESIA, ESMP and Grievance process Provide written comments to consultants	Overall review of the project development stages		Draft time-bound action plans for the contractor in case of non-compliance	
	Tendering all the project works and consulting services	Supervise and monitor the whole process to ensure the proper application of the WB's environmental and social safeguard policies are applied.	Review of incoming reports to see the Bank standards are in progress. Recommend additional measures to strengthen the management framework and improve implementation performance.			
Disclosure Roles	Disclose ESMP on the official website of municipalities after approval of Ilbank and WB	Confirm and Disclose the ESMP on Ilbank's official website Disclosure of official approval of environmental and social assessment documents and related procedures for the project in accordance with WB safeguarding requirements, to perform the overall quality assurance function to ensure that EA documents meet WB requirements	Confirm and Disclose the ESMP on WB's official website			

Construction Phase Responsibilities	Prepare tender documents for the construction process.	Obtaining the opinions of affected groups and local environmental/social experts on the environmental and social aspects of the project implementation and organizing field visits with these groups when necessary	Visit project sites from time to time, when necessary, as part of the project	Implement all commitments determined by Kadirli Municipality.	Guide Kadirli Municipality officials and consultants in the implementation of World Bank requirements (documents and procedures) in the E&S framework after approval by Kadirli Municipality	
	Conduct tenders in accordance with public procurement legislation and WB legal requirements.	Coordinating and communicating with WB inspection officers regarding the environmental and social protection measures of the project implementation in organizing field visits.		Supervise the construction and/or rehabilitation works and installation of equipment	Ensure the provision of sufficient capacity to carry out C&S audits effectively in accordance with ESMF requirements when the implementation of mitigating measures by the Contractor is deemed necessary	
	Share the ESMP with the Contractor, guide the Contractor in preparing sub-management plans, and approve these plans.					
	Update the ESMP when necessary and share additional commitments with the Contractor.					
	Coordinate actions and evaluations in case of changes due to engineering/design changes, route/location changes, legislative					

	changes related to environmental and social issues, authorization provision changes, new environmental/social data, construction/operation strategy changes.					
Monitoring Roles	Evaluate performance indicators, environmental reviews, monitoring, inspections, and results related to ESMP applications.	Monitoring the implementation of ESMP and other environmental and social mitigation measures, auditing Kadirli Municipality's ESMP implementations and documenting performance, recommendations, and other necessary steps within the scope of overall project supervision	Oversee the project in accordance with WB Safeguard Policies and provide technical support and guidance	Monitore construction activities (including subcontractor activities) and taking and implementing measures within the scope of the ESMF	Report environmental audits, monitoring, and inspections related to E&S practices to Kadirli Municipality.	
	Prepare Environmental and Social Monitoring Reports (ESMRs) every three months, submit them to ILBANK, and inform them.	Inform WB through Environmental and Social Monitoring Reports (ESMRs) to be submitted by Kadirli Municipality every three months.		Submit Monthly Environmental and Social Monitoring Reports (ESMRs) to the Project Owner Municipality	Monitore and evaluate the performance of services provided by the contractor	
	Monitor contractor activities.	Submit Project Progress Reports to WB every 6 months.			Ensure regular (monthly) reporting of the Contractor's C&S performance to the Municipality and ILBANK	
Training Responsibilities	Provide necessary training on Environmental and Social Management issues to Project Management Unit (ILBANK) and relevant directorates.				Provide necessary environmental and social training to the contractor and subcontractor personnel	
Urgent Action Roles	Ensure compliance with project standards and take			Promptly notifying the Project Owner of	Ensure the tracking and analysis of	

	urgent actions in case of non-compliance.			unexpected situations, such as environmental, social, and occupational issues or accidents, incidents, or time loss, and maintaining an on-site incident log throughout the project lifespan. An incident report, including root cause analysis and corrective actions needed, will be submitted to ILBANK and the World Bank within 30 days.	environmental and social incidents	
	Halt work in any situation threatening the environment, community, and occupational health and safety.				notify ILBANK and the Municipality, exercising the contract authority in case non-compliance persists	
	Analyze and monitor environmental and social accidents/incidents.					
Stakeholder participation Roles	Ensure stakeholder participation, implement the grievance redress mechanism, and ensure continuous information transfer through open communication.	Provide guidance on public participation and announcement requirements when necessary			Provide guidance on public participation and announcement requirements in accordance with World Bank requirements	Taking part in organizing the introduction ESMP to the public and NGOs within the scope of the project and stakeholder engagement events

Implementation of ESMP Disclosure

Ensuring the full integration and implementation of this ESMP into all project preparation and planning activities constitutes one of the key responsibilities of Kadirli Municipality. It will provide a framework for all physical works and participation processes within the scope of the project. It will be an integral part of the matrices prepared for the tender processes related to physical works. The technical requirements, conservation, preservation, and monitoring measures outlined in the ESMP will be strictly adhered to in the tender documents, and it will be explicitly stated that the processes will be subject to review according to this plan.

The ESMP, prepared in accordance with the requirements of the World Bank Safeguard Policies, will be publicly disclosed and will be the responsibility of ILBANK. Kadirli Municipality will publish the final approved ESMP on its website. Additionally, a unit, easily accessible by affected groups such as Muhtar offices and local NGOs as outlined in the Stakeholder Analysis section of this plan report, will be established.

Like all management plans, the ESMP has a dynamic structure. It will be periodically reviewed during the implementation and operation phases of the project, deficiencies, malfunctions, and issues will be reported, and based on these reports, it will be updated and approved when deemed necessary. For each approved updated version of this ESMP, Kadirli Municipality is responsible for sharing it with the public and providing explanations through communication channels. Thus, the implementation of the ESMP and the actions taken during the implementation process will be transparently shared with the public. The ESMP and Stakeholder Engagement Mechanism must be disclosed to all stakeholders and the public as part of environmental and social impact assessment studies.

It is expected that this ESMP will be completed by the Consultant before the project's implementation phase. Documents necessary for the implementation of the ESMP should also be prepared accordingly, and each system required for the project, such as the Grievance Redress Mechanism, should be explained.

Institutional Capacity Building and Training

The Project Owner, Kadirli Municipality, will conduct a training and awareness program covering the expectations and commitments of the ESMF. The Supervision Consultant, in collaboration with the Project Owner, needs to organize a workshop to identify priority topics for the training. The target audience for the training programs includes employees and contractors responsible for implementing the ESMP. The Project Owner must provide training to employees and subcontractors before the construction phase begins. The training is expected to last at least two days and should be held twice a year. Depending on the level of responsibility for implementing the ESMP, advanced training programs should also be considered.

The code of conduct, including compliance with behavioral rules addressing gender-based violence, sexual harassment, sexual exploitation, and abuse, will be explicitly stated in the personnel's contract terms. The consequences of non-compliance with behavioral rules will be clearly outlined in the contract. Measurement and evaluation should be conducted at the end of the training provided to personnel.

This aims to enhance the competence of the personnel. Based on the review results, adjustments to the training program can be made if necessary, including changes in trainers or repeating the training. The training program/modules will cover a range of topics, including but not limited to:

- Objectives of the ESMF concerning project activities,
- Workshops by ILBANK to familiarize municipalities and their potential consultants with WB safeguard policies
- Requirements in management plans and monitoring activities to be conducted within this framework,
- Environmental and social data collection, reporting, and monitoring,

- Understanding sensitive environmental and social receptors in the project area and surroundings,
- Raising awareness about potential risks and impacts arising from project activities,
    - Trainings related to management of air emissions, waste management, etc.
    - Routine training on fire safety and first aid
- Complaints redress mechanism developed within the project scope, the officer responsible for the mechanism, and employee rights,
- Risks and measures related to community health and safety, personal protective equipment and information on works and occupational safety
- Occupational health and safety, first aid, emergency preparedness, and emergency scenarios
- Rules for maintaining behavior and workplace harmony,
- Communication with the local community,
- Training on behavioral rules covering gender-based violence, sexual harassment, sexual exploitation, and abuse,
- Principles of traffic and road safety,
- Waste separation, storage, and training on environmental planning
- Capacity building activities such as training, workshop, study tours
- ESF Borrower Training roll out program.

Environmental and Social Monitoring Report

The Environmental and Social Monitoring Report serves as a crucial tool for recording performance indicators, parameters, and measurement values at specified intervals to be used in the measurement of safeguards and monitoring measures. It is critical for anticipating potential issues that may arise throughout the project's life cycle and determining mitigation, reduction, and improvement strategies to effectively address these issues. The results will be assessed for compliance with established standards by comparing them with national legislative requirements and the World Bank EHS Guidelines. Visual observations, along with documented significant issues, will be presented in written form. The report should focus on both positive practices and negative findings, with photographic evidence supporting negative observations. For each negative observation, a corrective action should be proposed with a reasonable deadline. Any analysis/sample collection/measurement report should be provided as an annex to the report, along with the relevant assessment and required improvement activities. The findings of the Environmental and Social Monitoring Reports will ensure the dynamic and living nature of this ESMP. Therefore, the ESMP should be reviewed and revised by the Municipality's PIU unit based on these findings.

Long-term monitoring reports are used to objectively evaluate the environmental and social performance of the project and determine its sustainability. This is a vital tool for understanding the long-term impacts of the project, developing strategies for future similar projects, and keeping the ESMP updated over time. Monitoring reports identify issues that can be improved and localized by assessing the project's environmental and social governance. It is expected to be used to develop strategic management to strengthen relationships among stakeholders influenced by the project and minimize its impacts. Additionally, long-term monitoring reports are used to evaluate the project's societal acceptance and reputation. Continuous communication with stakeholders, obtaining feedback, and developing effective response strategies to this feedback are important in this regard. The experience gained will contribute to identifying potential problems in advance and developing emergency intervention strategies.

Documenting and monitoring the environmental and social performance of the project for the World Bank and ILBANK enhances trust in the project and increases the municipality's future financial reliability. Furthermore, monitoring reports contribute to the development of good practice standards in the renewable energy sector, the widespread implementation of similar projects at the

district and even provincial levels, and the localization of relevant standards, thereby contributing to regional development and sustainable development goals.
In addition to all these, it will provide an important baseline for physical spatial planning studies that determine the future of cities. It is expected to generate important data in terms of identifying criteria that can be used in determining suitable areas for renewable energy and integrating them into planning processes. Long-term evaluations obtained through monitoring reports will be crucial for ensuring the sustainability of planning decisions throughout the life cycle of projects, assessing environmental and social changes, and providing opportunities to enhance planning processes.

6. Stakeholder Engagement

This Stakeholder Analysis is based on the relevant Turkish legislation and international regulations by considering the project is exempt from EIA and classified as a Category B Project according to the WB OP 4.01. In conformity, relevant WB OPs (i.e., WB OP 4.01 and WB's 2010 Policy on Access to Information) and EU Directives. In this regard, the relevant national and international policies considered are given below.

Stakeholder Identification and Analysis

The purpose of a stakeholder identification is to determine and prioritize the project stakeholders for consultation that may be affected (either directly or indirectly in positive or negative way) by the project or that have an interest in the project but are not necessarily directly impacted by it.
The following categories of stakeholders have been identified as being affected by or potentially interested in the Kadirli Municipality Solar Power Project.

- Project affected parties,
- National governmental and non-governmental organizations (NGOs),
- Local governmental organizations and NGOs,
- Residents (potentially PAPs including landowners/users/ renters/ informal users of the lands),
- Local businesses
- Vulnerable groups
- Refugees

In the stakeholder identification process, the dynamics between the stakeholders, the risks, and opportunities of being involved in the project are considered. The basis of stakeholder identification is the level of interest and interaction with the project. Accordingly, stakeholders can be grouped under the following categories.

- Direct Stakeholders
- Indirect Stakeholders
- Other Interested Parties

Within the scope Kadirli Municipality Solar Power Plant Project of this project, a comprehensive list of the internal and external stakeholders is given in Table 7.

Table 7: Comprehensive List of the Stakeholder Identified for the Project

Stakeholder Groups	Level of Interest	Level of Influence
Direct Stakeholders		
Directly Affected Communities		
Residents in the project area of influence	Moderate	Low

Stakeholder Groups	Level of Interest	Level of Influence
Direct Stakeholders		
Vulnerable individuals/groups in the project area of influence	Low	Low
SuTP living in project areas of Osmaniye	Low	Low
Formal or informal users of lands allocated to the project	Low	Low
Public Administrations at National Level		
The Ministry of Environment, Urbanization and Climate Change.	Low	Low
Ministry of Energy and Natural Resources	High	High
Turkish Energy Market Regulatory Board	Low	Low
Ministry of Industry and Technology	Low	Low
General Directorate of Energy Affairs	High	High
General Directorate of ILBANK	High	High
Directorate General of Migration Management	Low	Low
Public Administrations/Authorities/Agencies at Provincial Level		
Kadirli Municipality	High	High
Kadirli Municipality	Medium	Medium
Provincial Directorate of Environment, Urbanization and Climate Change	Moderate	High
Mukhtar of Kurtuluş Neighborhood	Moderate	High
Toroslar Electricity Distribution Company	High	High
Contractors/Sub-contractors and Supervision Consultant Companies	High	High
Indirect Stakeholders		
Indirectly Affected Communities		
Residents outside of the project area of influence	Low	Low
Vulnerable individuals/groups outside of the project area of influence	Low	Low
Public Administrations at National Level		
Ministry of Agriculture and Forestry	Low	Low
Public Administrations/Authorities/Agencies at Provincial Level		
Governorship of Kadirli	Low	Moderate
Provincial Directorate of Disaster and Emergency	Low	Low
Provincial Directorate of Health	Low	Low
T.C. Eastern Mediterranean Development Agency (DOĞAKA)	Low	Low
Turkish Employment Agency (IS-KUR) –Osmaniye Branch	Low	Moderate
Other Interested Parties		
Chamber of Environmental Engineers	High	High
International Solar Energy Society (GUNDER)	Moderate	Moderate
International Refugee Rights Association	Low	Low
Business enterprises located in the Project area	Moderate	Moderate
Akdeniz University	Low	Low

The types and causes of exposures and how above-mentioned stakeholder groups are affected (positive/negative) are given in Table 8.

Table 8: The Potential Impacts of Project Activities on Social Components

Social Component	Type of Potential Impact (Positive/Negative)	Potential Impact Definition
Emergency Response	Positive	After the increase in the electricity prices in Turkey, municipalities are having difficulties paying them. After the implementation of this project, it is expected to be offset the energy demand and decrease in carbon footprint.
Local Employment	Positive	Employment opportunities for local engineers and manpower.
Transportation/Traffic	Negative	Safety issues due to increase in traffic, damages on roads, generation of greenhouse gas emissions / noise.
OHS and Community H&S	Negative	Water pollution, air emissions/noise and visual pollution
Tourism	Negative	Aesthetic issues.

As part of the stakeholder identification process, it is also important to identify individuals and groups that may be differentially or disproportionately affected by the Project because of their disadvantaged or vulnerable status. The potential vulnerable/disadvantaged groups can be listed as follows:

- Households with physically and / or mentally disabled family members,
- People with chronic diseases,
- Elderly people over 65 years of age who live alone and in need of care,
- Female-headed households,
- Households where the head of the household is a child,
- Households with low or no income, and
- Refugee households.

Considering the potential vulnerable/disadvantaged groups, the summary of project stakeholder needs is given in Table 9.

Table 9: Potential Vulnerable/Disadvantaged Groups and their needs

Community	Stakeholder group	Key characteristics	Language needs	Preferred notification means (e-mail, phone, radio, letter)	Specific needs (accessibility, large print, childcare, daytime meetings)
Kurtuluş Neighborhood	Parents with young children	The number of households affected and which of children - To be Determined (TBD)	Official language	Written information, radio	Childcare for meetings—late afternoon preferred timing
	Refugees	The number of extended families TBD, poverty level	Language alternative	Visit with translator and civil society representative	Graphics, education on process
	Persons with disability	The number of disabled person TBD	Official language and/or sign language	Written information, radio and/or face-to-face with competent person on sign language if possible	Accessibility i.e., providing transportation
	Other groups	The number of person TBD	Official language	Written information, radio Visit at their own places	Graphics, education on process

Stakeholder Engagement Plan

Stakeholder Engagement is a control mechanism that ensures the implementation of key principles during the project. The engagement activities will not be scheduled in a manner due to the small capacity of solar power plant project. To maximize stakeholder engagement, it prevents disruption of local stakeholders' daily work and regulates the timing and number of engagement activities. Accordingly, recording the findings and feedback together in accordance with all engagement activities, sharing them with the responsible parties, and following the process are essential. Also, engagement activities need to be culturally appropriate, provide equal access to relevant stakeholders, and enable their feedback. No stakeholder engagement activities will be scheduled for this project yet.

Roles and Responsibilities

Kadirli Municipality and Contractor will implement the SEP activities during the construction and operation phases of the Project. The planned organizational structure of the Team is presented in Table 10.

Table 10: Responsibilities of Key Actors/Stakeholders in SEP Implementation

Actor/Stakeholders	Responsibilities
Kadirli Municipality	SEP Management Stakeholder engagement activities. Establishment of Grievance Redress Mechanism Management or resolution of Grievances resolution. Consultation on specific SEP activities;
ILBANK	Monitoring and supervising the process of SEP implementation. Reporting the progress of SEP implementation to WB on regular periods
Contractor/Subcontractor(s)	Taking part of in SEP activities. Reporting of issues to Kadirli Municipality related to stakeholder engagement. Grievance management and resolution. Resolution of grievances issues resulting from construction activities with collaboration and under the direction of Kadirli Municipality. Informing Kadirli Municipality on construction activities (such as road closures and service interruptions). Internal Reporting to Kadirli Municipality on SEP implementation
Supervision Consultant	Guide public participation and announcement requirements. Provide necessary information to Kadirli Municipality Review GRM and complaints to Kadirli Municipality.
WB	Audit the Kadirli Municipality's compliance with the provisions set out in the SEP managed by the Municipality during the construction and operation phase via the Project Progress Reports Visit project sites to conduct its own monitoring at certain intervals or when necessary.

Grievance Mechanism

Kadirli Municipality will establish a Grievance Redress Mechanism (GRM) to receive, resolve, and follow the concerns and complaints of the Project affected communities. All grievances will be effectively received, recorded, and responded to within a predetermined timeline and based on their contents.

At the earliest convenience, the stakeholders will have access to Kadirli Municipality PIU and Contractor dedicated CLOs for responses to responses to grievance. Stakeholders will be informed on the Satisfactory responses to the grievances and corrective activities. The GM for the stakeholders will be operated according to the following procedure.

1. Following tools will be used so that all stakeholders can be informed regarding the Project's GRM process:

- Web page
- Email address
- Public meetings
- Telephone
- Frequently Asked Questions (Brochure, web page, bulletin, etc.)

2. Grievances can be submitted by the channels outlined below:

- Telephone (Call Center and units)
- Personal visit to Kadirli Municipality and Contractor head office/branches
- Grievance boxes (installed at the Kadirli Municipality Units / Contractor)
- Relevant public administrations (district governorship, municipality, headmen)
- Email
- Meetings
- Staff and local communication desk of Kadirli Municipality / Contractor
- By written petition to Kadirli Municipality / Contractor
- During site visits and miscellaneous

3. All the submitted grievances are collected at the GRM Section of PIU Department.
4. The submitted grievances are recorded in databases by CLOs of PIU and Contractor.
5. PIU and Contractor CLOs or any contact person who received the grievance confirm the grievance reception via phone and/or email within 2 days.
6. The response to the relevant grievance will be drafted by CLOs of PIU / Contractor and approved by Project Managements.
7. After responding to the relevant grievance, necessary revisions will be made on the Grievance Form with respect to the result of GM process which will be communicated with relevant Complainant within 10 working days. The required actions for valid grievances will be taken within 15 working days. If applicant accepts the resolution within 30 days, the submitted grievance is marked as closed. If the applicant does not sign-off Complaint Close-Out Form due to insufficient satisfaction, a meeting will be organized by the PIU management on relevant complaint and if necessary, with the participation of Contractor. The compliant can participate this meeting to submit his/her Project-related concern face to face to the management. The aim of this meeting is to find alternative solutions of which both parties agree with.
8. All the grievances will be monitored by recording them via the monitoring and evaluation system which will be established within the scope of GM.
9. Regarding grievances received by Contractor; the grievances which are within the scope of Contractor responsibility will be handled by itself and reporting to the PIU during monitoring activities. The grievances within the scope of Kadirli Municipality responsibility will be immediately communicated with PIU by Contractor and handled by the PIU accordingly. Contractor CLO is responsible for recording and tracking grievances.
10. If the complaint cannot be resolved with the existing process, applicants can always apply to relevant legal institutions. Such institutions can be summarized as follow:

- Civil Courts of First Instance
- Administrative Courts
- Commercial Courts of First Instance
- Labor Courts, and Ombudsman (https://ebasvuru.ombudsman.gov.tr/)

During construction and operational activities, the GRM described above shall continue to be driven by stakeholders' views, making this procedure accessible to all affected stakeholders. Requests that require urgent remedy and/or support shall be responded to and given support within the same day. All outstanding grievances/requests shall be recorded within two business days, reviewed, and assessed within ten business days, and concluded not later than 15 business days. Corrective actions shall be taken to resolve the grievance. GM Flow Chart is given in Table 11 .

Table 11: Grievance Mechanism Flowchart

Stage of GM	Required Action
Grievance submission	Receiving the grievance by any above-mentioned communication channel. (Following to receive more sensitive grievances i.e., SEA/SH, child abuse or abuse, necessary action will be taken within 48 hours. For such cases at the workplaces, the complaint will be directed by the GM focal point (based in ILBANK headquarter) to relevant legal authorities/service providers such as Ministry of Family and Social Services and Prosecutors Office.)
Grievance registration	Grievance Form and Grievance Register Table are used during registration process. After grievance registration, feedback will be sent to the Complainant for the purpose of confirmation within two (2) days. Anonymous registration will be conducted if a Complainant requests that complaint of whom is handled anonymously.
Grievance assessment	Grievances are assessed within 10 working days with the clarification of the fact that relevant grievance is compliance with admissibility criteria. The Complainant will be informed appropriately in case of invalid grievances.
Responses to the grievances	According to the grievance type, consultation with stakeholders in question can be conducted on site. After grievance assessment, grievance will be responded appropriately via previously mentioned communication channels. Application to ILBANK or Court of First Instance is also available for Complainants if a resolution cannot be figured out for whose grievances.
Grievance closure	As long as alternative agreement is not conducted, grievance of Complainant is closed within fifteen (15) Business Days as of submission date and the Grievance Close Out Form is filled accordingly. In the case of grievances cannot be closed within fifteen (15) Business Days, it is ensured that well documented mitigatory circumstances related to which are reported. Regarding the anonymous grievances, outcome of GMGRM process and associated taken actions should be declared on Kadirli Municipality website for the purpose of informing relevant Complainants.
In the case of unresolved grievances	ILBANK monitors GM process according to following outline: -Confirmation of grievance submission -Assessment of grievance by the Kadirli Municipality and information to ILBANK accordingly -Communication of grievance response to Complainant by the Kadirli Municipality which is monitored by ILBANK (The timeframe for response at this level is thirty (30) days.) -Application to Court of First Instance by Complainants in case of unresolved grievances
Reporting	The grievances will be analyzed quarterly by Kadirli Municipality PIU considering the frequencies, types, and resolution methods of which. By doing this, for instance, complaints submitted by majority of Contractor/Subcontractor(s) and/or those originated from certain works can be determined in a better way. The outcomes are reported to the PIU management by CLOs
Right to Appeal	If the complaint cannot be resolved with the existing process, applicants can always apply to relevant legal institutions. Such institutions can be summarized as follow: • Civil Courts of First Instance • Administrative Courts • Commercial Courts of First Instance • Labor Courts, and Ombudsman (https://ebasvuru.ombudsman.gov.tr/)

Monitoring and Reporting

Kadirli Municipality PIU and the Contractor CLO will record all incoming corporate grievance/comment databases.

Kadirli Municipality PIU will assess the number and nature of grievances/comments (if any) quarterly and their effectiveness to address grievances/comments based on the number and percentage of closed grievances. The monitoring framework is described in Table 12.

Table 12: Grievance Mechanism Monitoring Framework

Parameter	Key Performance Indicator	Phase	Frequency	Responsible Party
Project GRM	• Number of grievances/comments received during per consultation • Types of the grievances/comments (community HS, employment, local procurement etc.) • Timeframes for response to each grievance • The number of open or closed grievances • Number of invalid or in progress grievances	Construction	Quarterly	- To be assigned by Kadirli Municipality PIU and Contractor
		Operation	Semi-annually in the first two years; Annually afterwards	- To be assigned by Kadirli Municipality PIU and Contractor
Workers' GRM	•Number of grievances/comments received by own workers • Number of grievances/comments received by indirect workers • Types of the grievances/comments regarding worker management and working conditions (e.g. Worker rights, OHS, etc.) • Timeframes for response to each grievance • The number of open or closed grievances • Number of invalid or in progress grievances	Construction	Monthly	- To be assigned by Kadirli Municipality PIU and Contractor
		Operation	Semi-annually in the first two years; Annually afterwards	- To be assigned by Kadirli Municipality PIU and Contractor
GM	Effectiveness of the GM	Construction	Quarterly	ILBANK

Public Participation Meeting

The draft version of this ESMP approved by ILBANK and the World Bank was shared with the district people at a Public Participation Meeting in Kadirli on February 19, 2024, in the Kadirli Municipality Meeting Hall. Mr. Abdülhamit Bağdat, Electrical and Electronics Engineer, and Ms. Ceren İlter, Urban Planner, from Ardea Project & Consulting presented to the participants the purpose of the Project, expected social, environmental and ecological impacts, measures to prevent or mitigate impacts, monitoring and management measures, grievance or suggestion procedure and grievance handling.

The public participation meeting was held with the participation of the Deputy Mayor of Kadirli Municipality, mukhtars of the settlements in the impact area, municipality employees and

neighborhood tradesmen, and residents of the district. At the end of the presentation, questions were asked by the participants on the possible negative impacts of the Project construction, its contribution to the district, and whether the Project will cover its own cost. The participants were informed that the construction works will start after the contractor is determined by the Project Owner and the construction is planned to take approximately 8 months. The Public Participation Meeting lasted approximately 1 hour, with the consultant company officials giving information about the project and the question-and-answer session held afterward. 13 people attended the meeting and minutes of meeting are attached in **Hata! Başvuru kaynağı bulunamadı.**.

7. Annexes

Annex 1: Land Register Document of SPP Project Area

BU BELGE TOPLAM 2 SAYFADAN OLUŞMAKTAD.. BİLGİ AMAÇLIDIR.

Tarih: 2-8-2022-12:07

webtapu

Tapu Kaydı (Aktif Malikler için Detaysız - ŞBİ yok)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz
Taşınmaz Kimlik No:	104435839
İl/İlçe:	OSMANİYE/KADİRLİ
Kurum Adı:	Kadirli
Mahalle/Köy Adı:	KURTULUŞ Mah.
Mevkii:	Zeytinli Dere
Cilt/Sayfa No:	3/273
Kayıt Durum:	Aktif

Ada/Parsel:	135/21
AT Yüzölçüm(m2):	24248.82
Bağımsız Bölüm Nitelik:	
Bağımsız Bölüm Brüt YüzÖlçümü:	
Bağımsız Bölüm Net YüzÖlçümü:	
Blok/Kat/Giriş/BBNo:	
Arsa Pay/Payda:	
Ana Taşınmaz Nitelik:	Çalılık

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/ Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
471355839	(SN:47) MALİYE HAZİNESİ VKN:6110312806	-	1/1	24248.82	24248.82	3402 S.Y. Kadastro Kanununun Ek 1. Maddesi Gereği Yüz Ölçüm ve Cins Değişikliği İşlemleri	-

1 / 2

Annex 2: Official Decision “EIA Not Required” of Osmaniye Provincial Directorate of Environment and Urbanization

T.C.
OSMANİYE VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

Sayı : E-51765934-220.03-8285191 20.12.2023
Konu : Muafiyet

KADİRLİ BELEDİYE BAŞKANLIĞINA

İlgi : 20/12/2023 tarihli ve "192140" Referans No'lu Başvuru.

İlimiz, Kadirli İlçesi, Kurtuluş Mahallesi Mevkii, 135 Ada, 21 Parsel sınırları içerisinde tarafınıza tahsis edilen 18.100 metrekarelik alanın 15.000 metrekarelik alanında tarafınızca yapılması planlanan Güneş Enerji Santrali-GES (999 kWe) 29/07/2022 tarih ve 31907 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği Listelerindeki esik değerden az olduğu için kapsam dışı olarak değerlendirilmiştir.

Bu kapsamda;

1-Kapsam Dışı Kararına esas dilekçe ve eklerinde belirtilen tüm taahhütlere uyulması,

2-Proje kapsamında yapılması planlanan değişikliklerin planlama aşamasında İl Müdürlüğümüze bildirilmesi,

3-Projenin İnşaat, işletme ve işletme sonrası dönemlerinde 2872 sayılı Çevre Kanunu ile 5491 sayılı Çevre Kanununda Değişiklik Yapılmasına Dair Kanuna istinaden çıkarılan yönetmeliklerin ilgili hükümlerine uyulması,

4-Diğer mer'i mevzuat çerçevesinde öngörülen gerekli izinlerin alınması, izin alınmaksızın herhangi bir yatırım yapılmaması/faaliyete başlanılmaması,

5-Çevresel Gürültü, Emisyon, Atıksu, Atık vb. çevresel konular kapsamında, faaliyet esnasında oluşması muhtemel sorunların kaynağında önlenebilmesi ve herhangi bir mağduriyet yaşanmaması adına gerekli tüm tedbirlerin alınması,

6-Ekolojik dengenin korunmasına, çevrenin korunmasına ve geliştirilmesine yönelik tedbirlere riayet edilmesi gerekmektedir.

Bilgilerinizi ve gereğini rica ederim.

Hamdi Görkem GENÇTÜRK
Vali a.
Çevre, Şehircilik ve İklim Değişikliği İl Müdürü

Çamlıkevler Mah. Fatih Bulvarı Dış Kapı No:2 80950 Toprakkale / Osmaniye
Telefon: 0 (328) 816 80 80 - Faks: 0 (328) 816 81 30
https://osmaniye.csb.gov.tr/
KEP Adresi : osmaniyecevrevesehircilik@hs01.kep.tr

Bilgi için:Hakan ALICI
Çevre Mühendisi
Telefon No:(328) 816 80 42

Annex 3:Official Allocation Document of SPP Project Area

77860
inv. kod.

T.C.
ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
MİLLİ EMLAK GENEL MÜDÜRLÜĞÜ

Sayı : E-66844966-400-3715988 24.05.2022

Konu : Kadirli Belediye Başkanlığı GES Tahsisi
(3121-117222)

DAĞITIM YERLERİNE

İlgi : a) Osmaniye Valiliğinin (Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü) 10.05.2022 tarihli ve E-3613979 sayılı yazısı.
b) Bakanlığımızca (Bakan Müşavirliği) yayımlanan 2018/11 sayılı İç Genelge.

İlgi (a) yazıda; İliniz, Kadirli İlçesi, Kurtuluş Mahallesinde bulunan, mülkiyeti Hazineye ait 135 ada 21 parsel numaralı 24.248,82 m2 yüzölçümlü taşınmazın Kadirli Belediye Başkanlığı adına tahsisli bulunduğu, taşınmazın tamamının tahsisinin kaldırılarak ilgi (a) yazı ekinde koordinatları ile gösterilen 18.100,00 m²' lik kısmının Güneş Enerjisi sistemi ile elektrik üretilmek üzere Kadirli Belediye Başkanlığı adına tahsisinin talep edildiği bildirilmiştir.

Buna göre; ilgi (b) Bakanlığımız İç Genelgesi ile kamu idareleri adına tesis edilecek tahsis işlemlerinin 2018/8 sayılı Cumhurbaşkanlığı Genelgesi uyarınca teşkil ettirilen Komisyondan alınacak izinden muaf tutulduğu dikkate alınarak, ilgi (a) yazı ile tahsis talebi bildirilen; İliniz, Kadirli İlçesi, Kurtuluş Mahallesinde bulunan, imarsız, mülkiyeti Hazineye ait 135 ada, 21 parsel no.lu ve 24.248,82 m² yüzölçümlü taşınmazın tahsisinin kaldırılarak ekli krokide gösterilen 18.100,00 m²'lik kısmının **üretilecek elektriğin münhasıran Belediye hizmetlerinde kullanılması, ticari amaçla kullanılmaması, üçüncü kişilere ticari ya da gayri ticari amaçla kullandırılmaması/ devredilmemesi, tahsisli idarenin ilgili mevzuatları ile belirlenen ve alınması zorunlu olan gelirler dışında her ne ad altında olursa olsun herhangi bir ücret alınmaması, tahsisli idare tarafından tahsis amacına uygun kullanım nedeniyle ticari amaca yönelik ünitelerin söz konusu ve zorunlu olması durumunda ise Hazine Taşınmazlarının İdaresi Hakkında Yönetmeliğin 67, 70 ve 73/A maddesine göre işlem yapılması, ayrıca 6446 sayılı Elektrik Piyasası Kanunu, 5346 sayılı Yenilenebilir Enerji Kaynaklarının Elektrik Enerjisi Üretimi Amaçlı Kullanımına İlişkin Kanun ile Enerji Piyasası Düzenleme Kurumu (EPDK) mevzuatı kapsamında ilgili İdarelerden gerekli izinlerin alınması kaydıyla,** 1 Numaralı Cumhurbaşkanlığı Kararnamesinin 101 inci maddesinin birinci fıkrasının (ç) bendi ile 5018 sayılı Kanunun 47 nci maddesi gereğince **"GES kurulmak üzere"** Kadirli Belediye Başkanlığı adına 2 (iki) yıl süreli ön tahsisi uygun görülmüştür.

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Doğrulama Kodu: 1CD0B6A3-622B-4EBB-8163-B1AB0859F172
Doğrulama Adresi: https://www.turkiye.gov.tr
Bilgi için:Nesrin GÜRLEK
Çevre ve Şehircilik Uzmanı

Belirtilen süre içerisinde yatırım projesinin hazırlanması, yatırım programına alınması ve üzerinde tesis/bina inşaatına başlanılması halinde ön tahsisin hizmet süresince devamı için kesin tahsise dönüştürülmesi yönünde talepte bulunulacaktır. Aksi halde tahsis işlemi herhangi bir işleme ve yazışmaya gerek olmaksızın kendiliğinden kalkmış sayılacaktır.

Bilgi edinilmesini ve gereğini rica ederim.

Mehmet VURAL
Bakan a.
Genel Müdür Yardımcısı

Ek: Kroki (1 Sayfa)

Dağıtım:

Gereği:
OSMANİYE VALİLİĞİNE (Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü)

Bilgi:
Kadirli Belediye Başkanlığına

Bilgi için:Nesrin GÜRLEK
Çevre ve Şehircilik Uzmanı

Annex 4: Official Decision of Osmaniye Provincial Directorate of Agriculture and Forest

03.08.2022
2279

T.C.
OSMANİYE VALİLİĞİ
İl Tarım ve Orman Müdürlüğü

Sayı : E-18529315-230.99-6486513
Konu : Arazi Sınıfı Hk.

KADİRLİ BELEDİYE BAŞKANLIĞINA
(İmar ve Şehircilik Müdürlüğü)

İlgi : 01.08.2022 tarihli ve 13746909-663.09-E80562 sayılı yazınız.

İlgi yazınız ile "Kadirli İlçesi Kurtuluş Mahallesi 135 ada 21 nolu parsel çalılık vasfında olup; mülkiyeti Maliye Hazinesine ait iken Güneş Enerji Sistemi ile Elektrik Üretmek Amacıyla (GES Kurulmak Üzere) Milli Emlak Genel Müdürlüğünün 24.05.2022 tarih ve 3715988 sayılı yazıları 18.100.00m2 alandaki kısmı Kurumunuza tahsis edildiği. 3. Şahıslar tarafından kısmen işgal edildiğinden 2886 Sayılı Devlet İhale Kanununun 75. Maddesi gereği Kadirli Kaymakamlığının 07.07.2022 tarih ve E-87640023-000-5762 sayılı yazısı ve eki Tahliye Komisyonu tarafından tahliye yapılarak Kurumunuza yer teslimi yapıldığı belirtilerek. Söz konusu tahsis edilen alanın 17.094,30 m^2 lik kısmına GES (Güneş Enerjisi Santrali) projesi yapılması planlanmakta olup; bu alanla ilgili 2022-80-000083 Başvuru Takip Nolu müracaatımız ile Kurumunuzca arazi sınıfının tespit edilmesi" talep edilmektedir

Konuya ilişkin 19.07.2005 tarih ve 25880 sayılı Resmi Gazete de yayımlanarak yürürlüğe giren 5403 sayılı "Toprak Koruma ve Arazi Kullanımı Kanunu" ile 26.04.2018 tarih ve 68656427-230.04.02-E.1290401 sayılı yazı ekinde bulunan "5403 sayılı Kanun Uygulama Talimatı" kapsamında İl Müdürlüğümüz teknik elemanları söz konusu taşınmazda 02.08.2022 tarihinde gerekli tespit ve incelemeleri yaparak, arazinin tarımsal özelliklerini gösteren Tarımsal Etüt Raporunu hazırlamışlardır. Hazırlanan 02.08.2022 tarihli Etüt Raporunda; İlimiz Kadirli İlçesi Kurtuluş Mahallesi 135 ada 21 parsel numaralı 24.248,82 m^2 yüzölçümlü "çalılık" vasıflı taşınmazın **Kuru Marjinal Tarım Arazisi Özelliği (KTA)** taşıdığı ve çevre tarım arazilerin tarımsal bütünlüğünü bozan alanlardan olmadığı belirtilmiştir.

Verilen bu görüş, izin yada izinlendirme işlemi olmayıp, sadece arazinin hangi tarım arazisi sınıfında olduğunun tespitidir. Bu alanlarda GES kurulmasına karar verilmesi halinde, İl Müdürlüğümüz ve Bakanlığımızın uygulamakta olduğu 5403 sayılı "Toprak Koruma ve Arazi Kullanımı Kanunu", 4342 sayılı " Mera Kanunu", 3573 sayılı "Zeytinciliğin Islahı ve Yabanilerinin Aşılattırılması Hakkında Kanun" ve 1380 sayılı "Su Ürünleri Kanunu" kapsamında izinlendirmelerin yapılması, bu izinlendirme ve kurum görüşümüz alınmadan tesislerin yapılmaması gerekmektedir.

Ayrıca söz konusu alanda izinsiz faaliyette bulunulması yada sahanın doğal yapısının bozulduğunun tespit edilmesi durumunda 5403 sayılı Toprak Koruma ve Arazi Kullanımı Kanununun 21. Maddesinde belirtilen hükümler doğrultusunda ilgili kurum ve kuruluşlar hakkında işlem yapılacağının da bilinmesi hususunda;

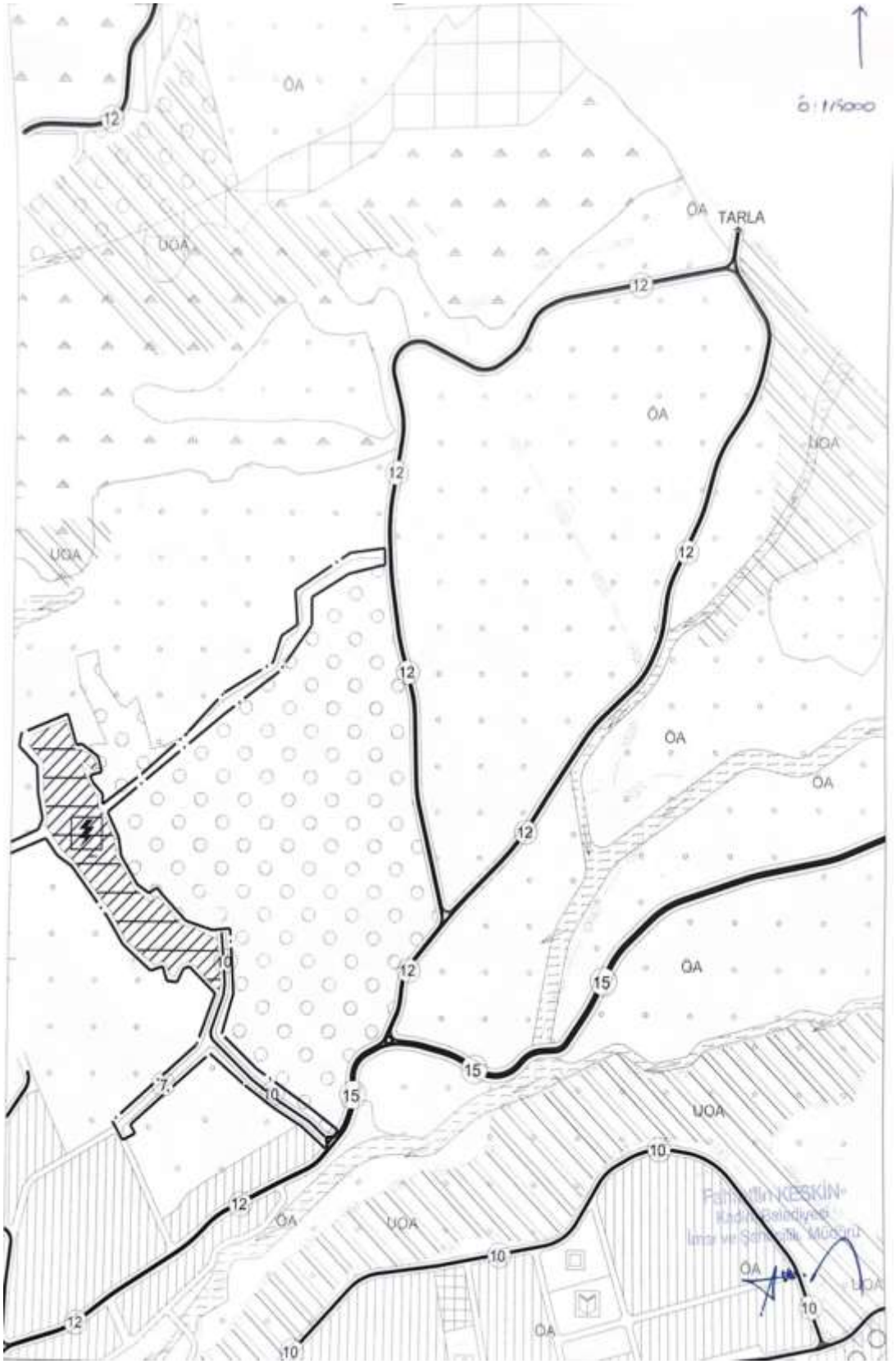
Bilgi ve gereğini rica ederim.

Adem YILMAZ

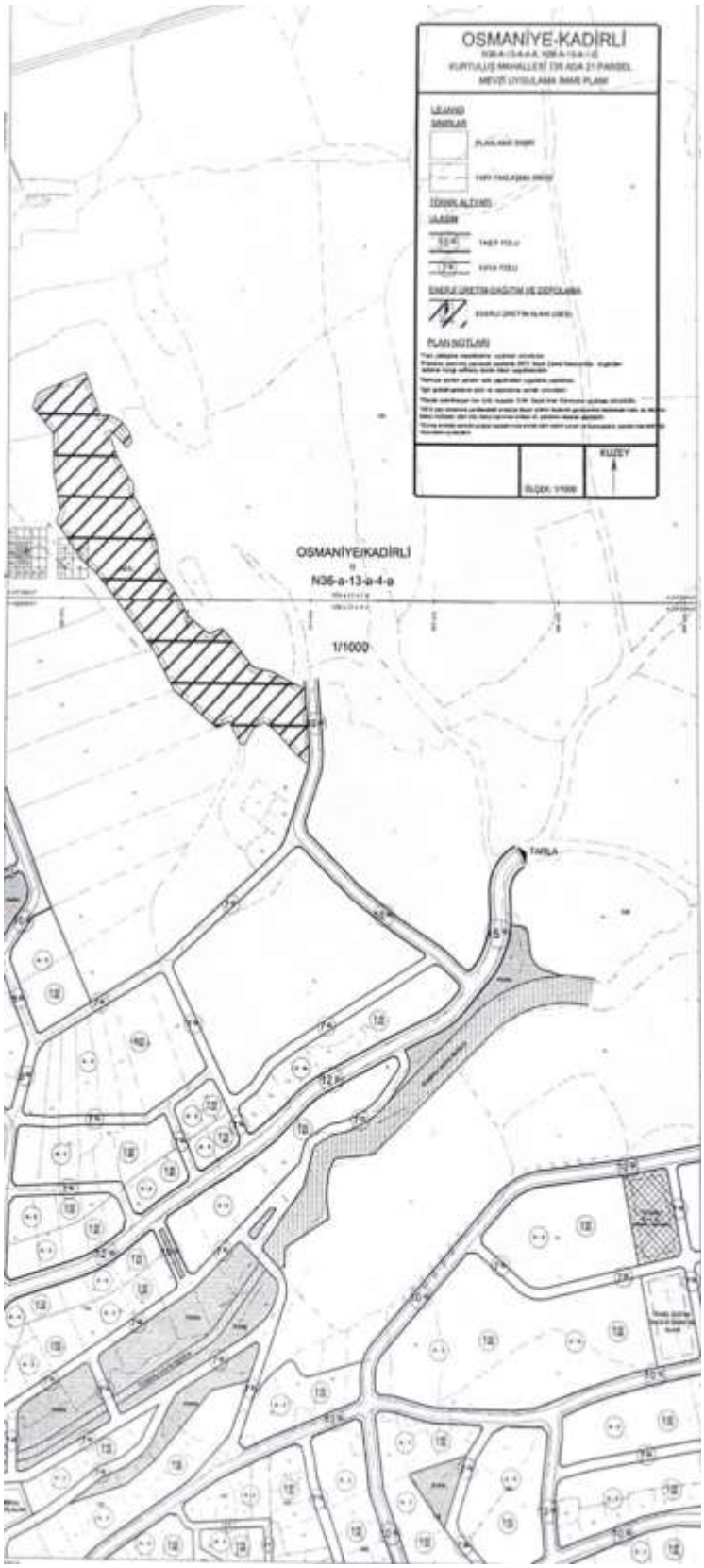
Bu belge güvenli elektronik imza ile imzalanmıştır.
Doğrulama Kodu: E222C5BD-6D76-4FB8-93F9-26D45C1C249E Doğrulama Adresi: https://www.turkiye.gov.tr/tarim-ebys
Yunusemre Mah. İskender Türkmen Cad. Yeni Otagar Yanı Osmaniye 3288141175-76
(325)814 11 75 76
E-Posta: osmaniye@tarim.gov.tr Kep:tarimveormanbakanligi@hs01.kep.tr
KEP Adresi : tarimveormanbakanligi@hs01.kep.tr
Bilgi için:Eyüp GÜN
Mühendis

1/2

Annex 5: Kadirli District SPP Sub Project Area-1/5000 Scale Zoning Master Plan



Annex 6: Kadirli District SPP Sub Project Area-1/1000 Scale Zoning Implementation Plan



Annex 7: Minutes of Public Participation Meeting

This project is co-funded by the European Union, the Republic of Turkey and the World Bank
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SUSTAINABLE CITIES PROJECT-II
Additional Financing

KADIRLI WASTEWATER TREATMENT PLANT SOLAR POWER PLANT PROJECT

MINUTES of PUBLIC PARTICIPATION MEETING

Revision : REV.00
Meeting Date : 19.02.2024
Meeting Place: Kadirli Municipality Meeting Hall

1. PUBLIC PARTICIPATION MEETING

Kadirli Drinking Wastewater Treatment Plant Solar Power Project which will be financed under SCP-II-AF is one of the sub-projects to support sustainable development.

The Environmental and Social Management Plan (ESMP) has been prepared in accordance with Turkish environmental and social legislation, WB Safeguard Policies including Operational Policies (OPs), WBG General EHS Guidelines and Industrial Sector Guidelines and ILBANK's ESMF. In addition to these studies, following the finalization of the ESMP, a Public Participation Meeting was held on 19 February 2024 at 11.00 hours.

1.1. Summary

In this subsection, information about the project was presented by the consultant company during the Public Participation Meeting. Details are as follows:

Kadirli Deputy Mayor Hakan Semercioğlu gave general information about the project and made the opening speech of the meeting. Overall information about the feasibility and ESMP process of the project was given by Abdülhamit Bağdat from the consultancy firm. The contribution of the SPP project to the district and technical information about the project were given, as well as information about how much energy will be generated annually within the scope of the project, on which block and lot/s it will be built and the energy transmission line.

Ceren İlter Soy gave information about the Environmental and Social Management Plan (ESMP) of the project. Within the scope of ESMP, the environmental and social risks of the project were evaluated, the baseline data analysis was made, the geography of the area, climate conditions, sunshine duration, vegetation, natural and cultural values, natural disasters such as floods and earthquakes were explained. The project may create future opportunities for the people living in the region, a large portion of the bills paid with taxes are used for the wastewater treatment system, but the energy obtained from this project and the budget allocated to this bill will be allocated for use in different areas and will be used to develop various projects for the coming years such as social facilities, infrastructure systems and similar. It was announced that he could be a pioneer.

3

1.2. Question & Answer Session

In this sub-section, the opinions, requests and questions of the participants and the relevant answers received during the Public Participation Meeting have been presented. The details are as follows:

Question 1:

Süleyman Akçalı, Mukhtar of Kurtuluş Neighborhood:

Who will be the people who will be employed in the project and what will be the benefit of the Solar Power Plant project for the neighborhood residents?

Answer 1:

Abdülhamit Bağdat, Electrical and Electronics Engineer and Manager of ARDEA Project & Consultancy:

He stated that the Solar Power Plant project will contribute to the region in terms of employment and that it is important that an investment of approximately 30 million will be made for Kadirli district. Abdülhamit Bağdat stated that the personnel who will work during the construction and operation phases of the project may be residents of the neighborhood and that they may create employment opportunities for the Kurtuluş neighborhood.

Request:

Orhan Or, Resident from Kurtuluş Neighborhood:

He stated that the people who will work in the employment of the project should be people living in Kurtuluş District and that they requested this.

Question 2:

Orhan Or, Resident from Kurtuluş Neighborhood:

Will only the municipality benefit from the energy produced within the scope of the project?

Answer 2:

Abdülhamit Bağdat, Electrical and Electronics Engineer and Manager of ARDEA Project & Consultancy:

The energy to be produced will cover the energy consumed by the wastewater treatment plant, and therefore only the municipality will benefit from the energy produced.

Question 3:

Harun Dikmen, Resident from Kurtuluş Neighborhood:

In case of any negativities such as fire, what kind of damage will the project cause to its environment and how will the neighborhood be affected by this?

Answer 3:

Abdülhamit Bağdat, Electrical and Electronics Engineer and Manager of ARDEA Project & Consultancy and Ceren İlter Soy, Urban Planner with ARDEA Project & Consultancy:

It has been stated that the solar power system has fire extinguishing equipment, warning systems and fire detection systems, and that in case of a possible fire, the energy will be cut off with smart systems, thus taking precautions against fire and preventing the fire from spreading around.

Question 4:

Süleyman Akçalı, Mukhtar of Kurtuluş Neighborhood:

Does the project have any harm in terms of radiation?

Answer 4:

Abdülhamit Bağdat, Electrical and Electronics Engineer and Manager of ARDEA Project & Consultancy:

The radiation produced by solar panels is at normal levels and is not at a level that will harm the surroundings. Risk analyzes have been carried out regarding the project and there is no risk of radiation.

All environmental and social screenings of the project have been carried out, the official decision "EIA is not required" has been received from the relevant institutions, and the documents have been prepared in accordance with the World Bank policies.

Question 5:

Süleyman Akçalı, Mukhtar of Kurtuluş Neighborhood:

What benefit will the project bring to us, to the Kurtuluş neighborhood?

Answer 5:

Ceren İlter Soy, Urban Planner with ARDEA Project & Consultancy:

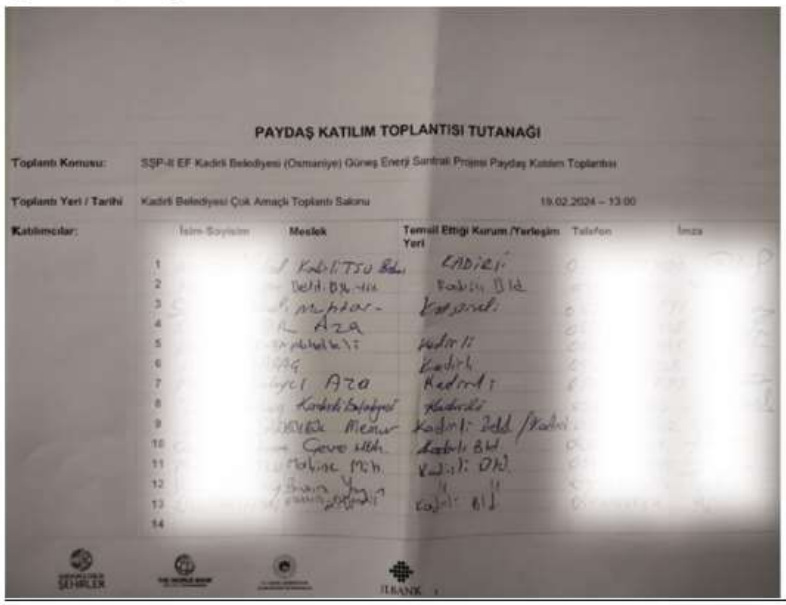
With the completion of the project, the municipality will reduce the electricity costs spent for the wastewater facility to zero, and the savings to be earned will enable the municipality to make other investments in the neighborhood. Practices such as the rehabilitation of the roads that need to be improved, and the construction of social reinforcement areas in the neighborhood are examples for different investments. It would contribute to economic development and sustainable development goals at both local and national levels. Although it does not seem to have a direct contribution to the neighborhood at the first stage, the project will contribute to both the district and our country at the national level. This project can be described as a first step towards becoming a self-sufficient Kadirli for energy. With this project being a best practice, renewable energy production projects can continue throughout the district, thus Kadirli can become a district that can produce its own energy. And all of these will start and happen in the Kurtuluş neighborhood.

1.3 Conclusion

The Public Participation Meeting lasted approximately 1 hour, with the consultant company officials giving information about the project and the question-and-answer session held afterwards. Necessary information was provided to the public about the Kadirli Waste Water Treatment Solar Power Plant Project and their questions were answered.

2. PARTICIPANT LIST

Figure 1: Participants Signature List



PAYDAŞ KATILIM TOPLANTISI TUTANAĞI

Toplantı Konusu: SŞP-II EF Kadıklı Belediyesi (Osmaniye) Güneş Enerji Santrali Projesi Paydaş Katılım Toplantısı

Toplantı Yeri / Tarihi: Kadıklı Belediyesi Çok Amaçlı Toplantı Salonu — 19.02.2024 – 13:00

Katılımcılar:

	İsim Soyisim	Meslek	Temsil Ettiği Kurum /Yerleşim Yeri	Telefon	İmza
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

3. ANNEXES

Annex 1: Photos of Public Participation Meetings

Figure 2: Photos of Meetings-1

8

Annex 2: Newspaper Advertisements

Figure 3: Newspaper Advertisements for Public Participation Meetings of Kadirli SPP

Figure 4: Informative. News Published on the Official Website of Kadirli Municipality regarding the Public Participation Meeting Held

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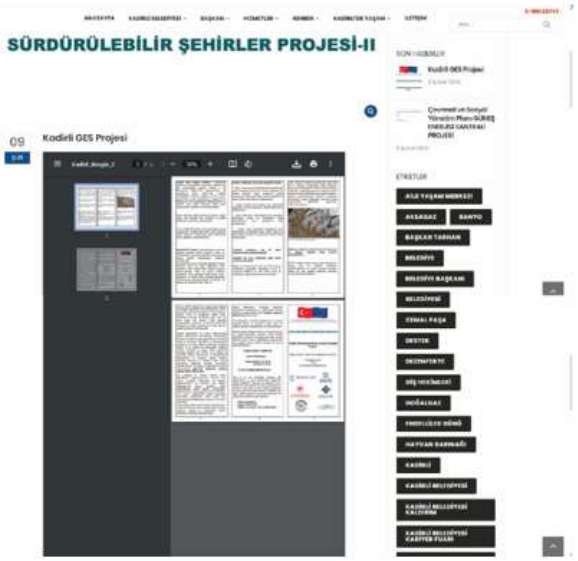
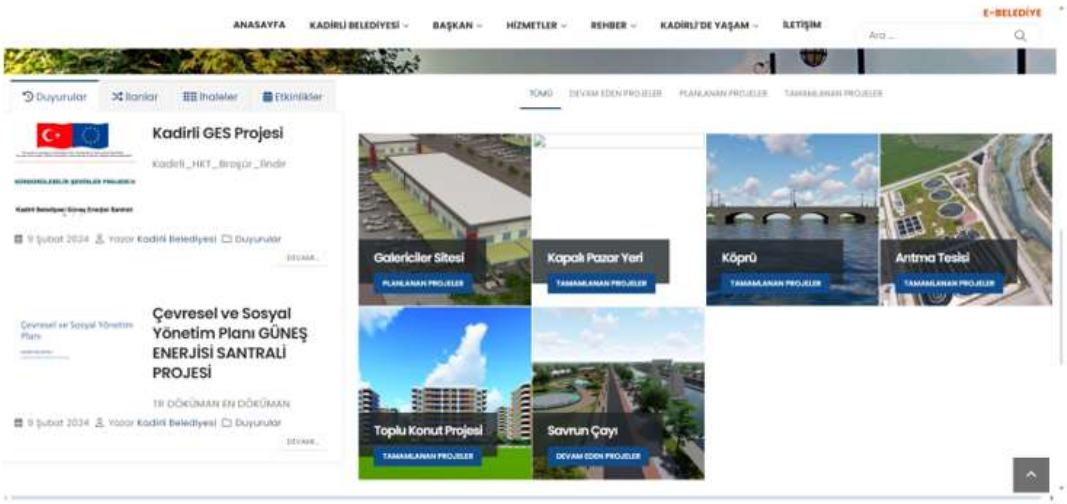
Annex 3: Documents and Announcements regarding ESMP and Public Participation Meeting Published in Official Website of Kadirli Municipality

Figure 5: ESMP Documents Published on Official Website of Kadirli Municipality



11

Figure 6:Public Participation Meeting Brochure and ESMP Documents Published on Official Website of Kadirli Municipality



12

Figure 7: Public Participation Meeting Announcement Published on Official Website of Kadirli Municipality

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Annex 4: Kadirli Municipality Public Participation Meeting Brochure

Monitoring and auditing activities to be implemented within the scope of the ESMP will also be defined. Within the scope of ESMP studies, impacts that may occur such as soil and air environments, noise, odor, water resources, wastes, traffic, ecosystem, existing natural disaster risks related to the area where the project will be established, reflection and glare effects that may be experienced due to SPP will be determined and relevant avoidance mitigation measures will be specified.

Monitoring requirements will also be defined and presented in the monitoring tables within the ESMP. Accordingly, during the construction phase of the project, topsoil loss and compaction, soil and water pollution due to leaching of pollutants and chemicals into soil and groundwater, dust emissions, noise during construction of the project and from temporary traffic load, waste generation and occupational health and safety, and during the operation phase, storage and use of chemicals, wastes, noise, reflection and glare impact of the power plant, livelihoods, grievances, community conflicts, stakeholder engagement, occupational health and safety and labor parameters will be monitored in accordance with the requirements set out in the ESMP.

The main institution responsible for the implementation of this Environmental and Social Management Plan (ESMP) is Kadirli Municipality, which is also responsible for the construction and operation phases of the Project. In addition, various parties (Contractors, Consultant firm, Project Implementation Unit, ILBANK, etc.) will be responsible for various aspects of the ESMP at different stages of the project. All mentioned activities will be coordinated by Kadirli Municipality.

5

Project documents will also be published on Tillo Municipality's website and will be shared by Tillo Municipality upon request.

Kadirli Municipality has established a **Grievance Redress Mechanism** to receive, resolve and follow up on concerns and grievances of Project affected communities.
All grievances will be effectively received, recorded and responded to within a predetermined timeline and according to their content.
Kadirli Municipality will be the responsible institution for the establishment and implementation of the Grievance Redress Mechanism. In this context, the communication channels given below can also be used to share expectations, opinions, suggestions and complaints about the project:

Public Engagement Meetings:

Kadirli Municipality:

0(328) 718 21 04

E-mail: belediye@kadirli.bel.tr

All internal and external stakeholders will also have the right to make use of other grievance redress mechanisms, such as the Presidential Communication Center (CIMER), which is accessible to all project stakeholders and used nationwide as an alternative and well-known channel to communicate project-related complaints and feedback directly to government authorities.

- **www.cimer.gov.tr**
- **Call Center:150**
- **Telephone Number: +90 312 590 20 00**

6

This project is co-funded by the European Union, the Republic of Turkey and the World Bank.

SUSTAINABLE CITIES PROJECTS-II

Kadirli Municipality
Solar Power Plant Project

Public Engagement Meeting Brochure

19 February 2024
11:00
Kadirli Municipality Meeting Hall

THE WORLD BANK
SÜRDÜRÜLEBİLİR ŞEHİRLER
T.C. ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
İLBANK
ARDEA PROJE

1

14

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP
SÜRDÜRÜLEBİLİR ŞEHİRLER
T.C. ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
İLBANK

This project is co-funded by the European Union, the Republic of Turkey and the World Bank
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The Kadirli SPP Project ("Project") is one of the sub-projects under the Sustainable Cities Project- II Additional Financing (SCP-II-EF) to support sustainable development in cities in Turkey. Specifically, the ESP-II EF aims to invest in sustainable urban development and develop project approaches related to the development of renewable energy sources, disaster and climate change mitigation and urban resilience to risks.

The project, financed by the World Bank (WB), will be implemented by Kadirli Municipality through İller Bankası A.Ş.

The project aims to contribute to local development by providing clean energy to the water treatment plant in Kadirli District by utilizing solar energy and meeting energy needs.

The Kadirli SPP Project aims to reduce the consumption costs of the district by obtaining the electricity energy needs of the water treatment plant used in the district from clean and renewable energy sources.
In this context, the Project will be constructed with a 30-year utilization period of the power plant to be established. The SPP project is expected to generate 2,060.3 Mwh of electricity annually. The population to be served by the Project is approximately 98,469 people. The Project will be constructed on an area of approximately 24,248.82 m2 on parcel 135/21 in Kurtuluş Neighborhood, Kadirli District, Osmaniye Province.

2

The expected results of the project are as follows:

- The project will provide access to clean, accessible and affordable water in Kadirli district of Osmaniye by providing solar energy to the water treatment plant, which accounts for a large portion of the municipality's energy consumption,

- The project will reduce dependence on fossil fuels for energy and ensure the economic development of the district,

- The project will contribute to Turkey's efforts to comply with national and international quality standards in the renewable energy sector;

- By utilizing clean energy sources, a step will be taken in the fight against climate change and will contribute to the environmental and economic well-being of local communities.

The construction of the project is planned to be completed in six (6) months.

Local people will be prioritized in the recruitment process of the project.

The Project will be in line with national legislation as well as good international practices including WB Safeguard Policies, guidelines, standards and best practice documents.

3

The project will create job opportunities for local people during the construction and operation phase. As the installed power capacity of the SPP project is below 1 MW, construction works are expected to be completed in a very short timeframe, road closures will be avoided as much as possible and businesses in the vicinity of the project are not expected to be closed due to construction activities.

Figure 1: Kadirli SPP Sub-Project Area

An Environmental and Social Management Plan (ESMP) has been developed to manage the expected impacts.

The ESMP is prepared to monitor and assess potential environmental and social impacts and risks over the life of the Project and to propose mitigation measures for significant adverse environmental impacts.

4

15

Annex 8: Consultation Form

	KADIRLI MUNICIPALITY Kadirli Municipality Solar Power Plant Project
	Consultation Form

Person Filling Out the Form:	Date and Time:
Meeting Agenda:	Consultation Record No:

1.CONSULTATION INFORMATION

Interviewed Institution:	Contact Type
Name and Surname of the Interviewee:	Telephone/Helpline ☐
Telephone:	Face-to-face Interviews ☐
Adress:	Website/E-mail ☐
E-mail:	Other (Explain) ☐

Stakeholder Type

Public Institution ☐	People Affected by the Project ☐	Private Institution ☐	Professional Chamber ☐	NGO ☐
Interest Groups ☐	Industry Associations ☐	Labor Unions ☐	Media ☐	University ☐

2.CONSULTATION DETAILS

Questions about the project:	
Project concerns/feedback:	
Responses to the views expressed above:	
Recording *Name-Surname / Signature*	Complainant *Name-Surname / Signature*

Annex 9: Grievance Form

	KADIRLI MUNICIPALITY Kadirli Municipality Solar Power Plant Project
	Grievance Form

Person Filling Out the Form:	Date and Time:
Meeting Agenda:	Reference No:

1.INFORMATION ABOUT THE COMPLAINANT

Full Name: If the complainant requests that this grievance be processed anonymously, it will be recorded as anonymous, and the request will be fulfilled.	**How the Grievance Was Received**
Turkish ID Number:	Telephone ☐
Telephone:	Face to face ☐
Address:	Website / E-mail ☐
E-mail:	Other (Explain) ☐

Stakeholder Type

Public Institutions ☐	People Affected by the Project ☐	Private Institution ☐	Chamber of Profession ☐	NGO ☐
Interest Groups ☐	Industry Associations ☐	Labor Union ☐	Media ☐	University ☐

2.DETAIL INFORMATION ABOUT GRIEVANCE

Grievance Explanation:	
Proposed Solution Method by the Complainant:	
Name-Surname/Signature of the Recording Personnel	**Name-Surname/Signature of the Complainant**

Annex 10: Grievance Close-Out Form

	KADIRLI MUNICIPALITY Kadirli Municipality Solar Power Plant Project
	Grievance Close-Out Form
Reference No:	
1.DETERMINATION of CORRECTIVE ACTION	
1	
2	
3	
4	
5	
Responsible Departments	
2.CLOSURE OF THE GRIEVANCE	
This section will be completed and signed by the Complainant in case the complaint specified in the "Grievance Registration Form" is resolved.	

Date: ……/……./……	**Name-Surname/ Signature** **Closure of the Grievance**	**Name-Surname/Signature of the Complainant**

Annex 11: Environmental and Social Screening Checklist

This checklist is used by executing agency to review the potential environmental and social safeguard impacts of subprojects and determine whether the subprojects will trigger relevant safeguard policies of World Bank. It is a tool to screen, classify and evaluate the project activities during project preparation.

Integrating Basic Principles to Strengthen Social and Environmental Sustainability

1. Determination of Basic Principles to Strengthen Project, Social and Environmental Sustainability
Description of how the project mainstreams a human rights-based approach
There are no settlements within the project area. Therefore, no human rights concerns regarding the project emerged during the preparation phase. A loan application has been made for the project, and the implementation process will begin after the loan application is approved. With the start of the project, stakeholder participation processes and complaint procedures will also be initiated. These processes will be subject to a monitoring mechanism. The opinions obtained during this process will be examined and resolved at regular intervals. Kadirli Municipality, the responsible organization leading the implementation of the project, is very willing to fulfill its obligations. Due to the decrease in energy costs and the potential contributions it will bring to various sectors, there is no risk of local governments not being able to fulfill their responsibilities. The evaluations have observed that it will not have a negative impact on the human rights of the affected population or excluded groups. The solar energy project was designed to provide clean energy to the water treatment facility used throughout the district by utilizing solar energy. Therefore, there will be no unfair or discriminatory impact on disadvantaged groups living in the immediate vicinity. Using renewable energy to meet electrical energy needs will allow efficient use of municipal resources and will create positive effects for the entire district population. This approach promotes inclusivity by promoting equitable distribution of local government resources and services among the entire population. Additionally, no risk of conflict or violence between project-affected communities and authorities has been identified.
Description of how the project can improve gender equality and women's empowerment
Women's groups/leaders have not raised gender equality concerns regarding the project during the stakeholder engagement process, grievance processes, or public statements. The project is not anticipated to involve or lead to adverse impacts on gender equality and/or the situation of women and girls. The project is not expected to reproduce discriminations against women based on gender, particularly regarding participation in design and implementation or access to opportunities and benefits. There are no foreseen limitations on women's ability to use, develop, and protect natural resources, considering different roles and positions of women and men in accessing environmental goods and services. There are no activities that could lead to natural resources degradation or depletion in communities that depend on these resources for their livelihoods and well-being. The project is not expected to exacerbate risks of gender-based violence.
Description of how the project mainstreams sustainability and resilience
By harnessing solar energy, the project reduces dependence on non-renewable fossil fuels, contributing to a more sustainable energy mix and reducing greenhouse gas emissions. Solar power projects typically have a lower environmental impact compared to traditional energy sources. They help mitigate air and water pollution, reduce carbon emissions, and minimize the ecological footprint associated with energy generation. Locating the project in the urban periphery can involve local communities in the development and implementation process. This engagement empowers communities by providing them with opportunities for involvement, education, and potentially creating jobs, thereby enhancing the social dimension of sustainability. Solar power projects contribute to energy resilience by providing a stable and predictable source of energy. This can be especially important for urban areas, ensuring a more stable energy supply and helping to mitigate the impact of energy price volatility. Incorporating solar power into the urban energy mix contributes to the diversification of energy sources. This diversification enhances energy security, making the urban area less vulnerable to disruptions in the supply chain of any single energy source. In urban peripheries, solar power projects can be integrated into smart infrastructure systems. This involves using technology to optimize energy production, storage, and distribution, creating more efficient and resilient energy systems. By reducing reliance on fossil fuels, solar power projects contribute to mitigating climate change impacts. The urban periphery location may provide opportunities for integrating green spaces, improving air quality, and enhancing overall climate resilience. Solar power projects in the urban periphery serve as visible examples of sustainable practices. They can inspire other urban development projects to incorporate renewable energy solutions, promoting a broader shift toward sustainability in urban planning and development. In summary, a solar power project in the urban periphery can serve as a catalyst for sustainable and resilient urban development, addressing environmental, social, and economic dimensions of sustainability. The integration of solar power in the urban periphery encourages the development of green jobs related to the renewable energy sector. This contributes to economic sustainability by fostering employment opportunities and skill development within the community. The project presents educational opportunities for the community, emphasizing the importance of renewable energy and sustainable practices. This educational aspect contributes to the long-term sustainability

of the region by raising awareness and promoting environmentally conscious behaviors.
Description of how the project strengthens accountability to stakeholders
The project strengthens accountability to stakeholders through transparent decision-making, active engagement, accessible information, responsive grievance mechanisms, regular reporting, clear communication, measurable performance indicators, and inclusive decision-making processes. The project promotes transparency by involving stakeholders in the decision-making process. Through open communication and consultation, stakeholders are informed about project objectives, progress, and potential impacts. This transparency would enhance accountability by ensuring that decisions are made collectively and with the input of relevant stakeholders. The project would facilitate regular stakeholder engagement activities such as meeting, workshops, etc. , providing a platform for dialogue between the implementing entities and stakeholders. These activities allow stakeholders to express concerns, provide feedback, and actively participate in shaping project outcomes. Regular engagement fosters a sense of ownership and accountability among stakeholders. In doing so, the project ensures that relevant information is easily accessible to stakeholders. This includes providing updates, reports, and documentation related to the project's environmental, social, and economic aspects. Accessible information empowers stakeholders to make informed decisions and holds project implementers accountable for the project's overall impact. A robust grievance mechanism is established to address concerns raised by stakeholders. This mechanism allows stakeholders to report issues, express grievances, and seek resolution. The responsiveness of the grievance mechanism demonstrates a commitment to accountability by addressing concerns in a timely and effective manner. The project engages in regular reporting and audits, providing stakeholders with detailed insights into project activities and outcomes. Regular reporting ensures accountability by keeping stakeholders informed about the project's adherence to sustainability goals, financial management, and overall performance. The project defines and conveys measurable performance indicators, allowing stakeholders to assess the project's success against predetermined benchmarks. This transparency in performance evaluation enhances accountability by providing stakeholders with objective criteria to gauge the project's impact. Involving stakeholders in decision-making processes ensures inclusivity and accountability. By considering diverse perspectives, the project strengthens its commitment to meeting the needs and expectations of all stakeholders, fostering a sense of shared responsibility.

Identifying and Managing Social and Environmental Risks

	2. The Potential Social and Environmental Risks?	3. The level of significance of the potential social and environmental risks?			6. Description of the assessment and management measures for each risk rated Moderate, Substantial or High
Risk Topic	**Risk Description (broken down by event, cause, impact)**	**Impact and Likelihood (1-5)**	**Significance (Low, Moderate Substantial, High)**	**Comments (optional)**	**Description of assessment and management measures for risks rated as Moderate, Substantial or High**
Land and Soil	Risk 1: Stripping of the Vegetative Topsoil Layer and Soil Compaction	Land Preparation Phase I = 2 L = 4	**Moderate**		During the project, there may be a risk of soil quality deterioration, which can affect vegetation and the ecosystem, leading to decreased efficiency. Additionally, soil erosion and structural ground problems can occur as a result of soil excavation.
		Operational Phase I = 0 L =0	**Low**		
	Risk 2: Leakage of Contaminants into the Soil and Waste and Chemical Storage	Constructional Phase I = 3 L = 1	**Low**		
		Operational Phase I = 0 L =0	**Low**		

Noise Pollution	Risk 3: Noise Resulting from Temporary Traffic Load Noise Caused by Construction Vehicles and Equipment Blasting, Stone, and Rock Removal Vibration Effects	Constructional Phase I = 2 L = 4	**Moderate**	The active use of the road passing through the settlement during the construction can impact the quality of life in the project area, and the environmental management plan should include measures to control and mitigate the noise and vibration effects. Additionally, it is important to minimize these effects that harm human health and the environment.	Nevertheless, due to the installed power capacity of this power plant being below 1 MW, the construction work is anticipated to be executed within a notably brief timeframe. The potential impact of this risk has been assessed as exceedingly low, given that it will not result in prolonged noise pollution. However, since there is a settlement close to the project area, the noise it generates may affect nearby residences.
		Operational Phase I = 0 L =0	**Low**		
Air Pollution	Risk 4: Dust and Exhaust Emissions from Soil Excavation, Vehicle Traffic and Equipment	Constructional Phase I = 3 L = 4	**Moderate**	These impacts may affect the environmental sustainability of the project. Therefore, the environmental and social management plan should include measures to reduce and control the effects of air pollution. Clean energy projects are important to protect air quality and minimize negative impacts.	As the installation of the power plant is anticipated to conclude expeditiously, it is plausible that transient emissions of exhaust and dust, stemming from activities such as soil excavation, leveling operations, vehicle traffic, and equipment usage, may occur during the construction phase. Diverse measures have been formulated to preclude air pollution even amidst this construction period. Furthermore, subsequent to the completion of the construction phase and the operational commencement of the power plant, no activities inducing air pollution are envisaged.
		Operational Phase I = 0 L =0	**Low**		
Traffic Congestion & Surrounding Residents	Risk 5: Temporary Blockage of Transportation Roads between Settlements Traffic Vehicles Cause Destruction on Roads and Buildings	Constructional Phase I = 2 L = 2	**Low**		The road leading to the project area is currently used by the local settlement and passes through the neighborhood. The road lacks an asphalt surface and is in suboptimal condition. It is mandatory to improve the condition of the road before starting the construction process. This becomes necessary during the construction phase, especially due to the increased traffic load attributed to the use of heavy-tonnage vehicles. The utilization of these roads with uneven surfaces by heavy-tonnage vehicles and equipment
		Operational Phase I = 0 L =0	**Low**		

					poses a temporary risk for the residents of Kurtuluş neighborhood, who use the same road during the construction period.
Pollution in Groundwater	Risk 6: Chemical Spills and Leaks Improper Storage and Disposal of Materials Inadequate Stormwater Management Inadequate Stormwater Management Inadequate Hazardous Material Handling	Constructional Phase I = 3 L = 1	**Low**		To mitigate the risk of groundwater pollution during the construction of solar power plants, it is essential to implement best practices in environmental management. This includes proper storage and handling of materials, implementation of erosion control measures, appropriate stormwater management, and adherence to regulatory guidelines for environmental protection. Environmental impact assessments and monitoring during the construction phase are also crucial to identify and address potential sources of pollution promptly.
		Operational Phase I = 0 L =0	**Low**		
Impacts on plants and animals, ecosystems, protected areas and landscapes	Risk 7: Fragmentation of forest habitats, Loss of nesting grounds and/or high biodiversity/sensitive habitats of rare, threatened, or endangered species, Placing obstacles to wildlife movement	Constructional Phase I = 1 L=1	**Low**		Considering the proximity of the project area to the residential area, it has been determined that the following environmental impacts do not occur: • Fragmentation of forest habitats, • Loss of nesting grounds and/or high biodiversity/sensitive habitats of rare, threatened, or endangered species, • Placing obstacles to wildlife movement. Therefore, no special measures are required to control or reduce these specific effects. However, relevant measures will continue to be taken to monitor and reduce other environmental and social impacts.
		Operational Phase I=0 L=0	**Low**		

Reflection and Glare Effect	Risk 8: Reflection and Glare Effect	Constructional Phase I = 3 L=3	**Moderate**	Reflection and glare effect is an effect created by solar power plants (SPP). This effect occurs as a result of reflection or glare from sunlight on photovoltaic panels or from a bright sky. The severity of reflection and glare effects may vary depending on the time of year and the geographical location of the power plant. Additionally, impact significance may vary depending on potential receptor points (settlements in the impact area, transportation routes, airports, etc.). Since photovoltaic panels absorb sunlight, the reflection and glare effects in PV type systems are generally lower than in systems using other solar energy technologies.	Following the identification of the region at risk of reflection in the Solar Power Plant area, visual monitoring should be conducted in the first year of operation to observe the reflection and glare effects. Landscape design with vegetative shading elements should be implemented at points where reflection and glare effects are identified to minimize their impact. If there are wetlands, bird breeding areas, or similar sensitive habitats in the reflection impact area, the reflection and glare effects of the solar panels on these areas should be monitored, and necessary measures should be developed. Also, there is a possibility that the reflection effects that it may create in the vicinity area where it is installed may adversely affect the visual aesthetics and air vehicle users in that region; it may cause visual pollution or distortion for pilots of air vehicles.
		Operational Phase I=3 L=3	**Moderate**		

4.The overall project risk categorization?		
Low Risk	☐	**Category C**
Moderate Risk	☒	**Category Low B**
Substantial Risk	☐	**Category High B**
High Risk	☐	**Category A**

5. The requirements of the SES based on the identified risks and risk categorization			
Only required for Moderate, Substantial and High-Risk projects			
Is assessment required? (check if "yes")			**Status? (completed, planned)**
if yes, indicate overall type and status	☐	Targeted assessment(s)	Since the project is Category Low B, these assessments are not required.
	☐	ESIA (Environmental and Social Impact Assessment)	
	☐	SESA (Strategic Environmental and Social Assessment)	
Are management plans required? (check if "yes)			
If yes, indicate overall type	☐	Targeted management plans (e.g. Gender Action Plan, Emergency Response Plan, Waste Management Plan, others)	Since the project is moderate risk, these management plans are not required. However, in the cope of SCP II AF, **Simplified ESMP** has been prepared for this project with low risk.
	☒	ESMP (Environmental and Social Management Plan which may include range of targeted plans)	
	☐	ESMF (Environmental and Social Management Framework)	

Based on identified risks, which Principles/Project-level Standards triggered?		**Comments (not required)**
Overarching Principle: Leave No One Behind		
Human Rights	☒	
Gender Equality and Women's Empowerment	☒	
Accountability	☒	
The Environmental and Social Standards of World Bank (ESS)		
1. Biodiversity Conservation and Sustainable Management of Living Natural Resources	☒	
2. Assessment and Management	☒	

of Environmental and Social Risks and Impacts		
3. Community Health, Safety and Security	☒	
4. Cultural Heritage	☒	
5. Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement	☐	
6. Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	☐	
7. Labor and Working Conditions	☒	
8. Resource Efficiency and Pollution Prevention and Management	☒	
9. Financial Intermediaries	☒	
10. Stakeholder Engagement and Information Disclosure	☒	

Environmental Screening Checklist

Sub-project Information	
Sub-project title	Kadirli Municipality SPP Subproject
Sub-project beneficiaries	Kadirli Municipality
Proposed date of start of work	
Brief description of sub-project	One of the main justifications of the SPP sub-project is to use clean energy in the wastewater treatment plant.
Site area, location	Osmaniye, Kadirli, Kurtuluş, Lot 21 of Block 135
Sub-project cost	
Status of national EIA process of sub-project	The sub-project is exempt from EIA due to Regulation on Environmental Impact Assessment (Official Gazette No. 31907, July 29, 2022)-Annex II (Annex 2).

Environmental and social impacts related to the proposed sub-project – the existing situation			
	Yes	**No**	**Details**
Will the sub-project adversely affect legally protected areas or internationally recognized areas of high biodiversity	☐	☒	The sub-project will not affect any protected areas or internationally recognized areas

value[2]?			of high biodiversity value, since there is no such areas around the-project area.
Will the sub-project be located in or near the environmentally sensitive or protected area (in accordance with national legislation)?	☐	☒	The sub-project will not be located in or near the environmentally sensitive or protected area (in accordance with national legislation), since there is no such areas around the-project area.
Will the sub-project adversely affect critical habitats such as forest ecosystems, wetlands, marshlands, and aquatic ecosystems or natural habitats?	☐	☒	There is no habitat with high sensitivity around the subproject area.
Will the sub-project adversely affect endangered plant and animal species?	☐	☒	There are no endangered flora or fauna species in or near the area.
Will the sub-project affect archaeological sites, historic monuments and settlements?	☐	☒	There is no negative impact on any historical assets located near the project.
Is there woods or forest around the sub-project area?	☐	☒	There are no woods or forest around the subproject area
Will the sub-project adversely affect the woods and forest?	☐	☒	Since There are no woods or forest around the subproject area, it will not affect adversely any woods or forest.
Is there any combustible and flammable subsidence material around the sub-project area?	☐	☒	No, there is not any combustible and flammable subsidence material around the sub-project area.
Is there underground facilities such as gas pipeline, electrical facilities?	☐	☒	No, there is not underground facilities such as gas pipeline, electrical facilities
Are there any overhead lines such as high-voltage lines in or near the sub-project area?	☐	☒	No, there is not any overhead lines such as high-voltage lines in or near the sub-project area
Will people permanently or temporarily lose access to facilities, services, or natural resources because of the sub-project activities?	☐	☒	No, local people will not be affected by losing access to facilities, services, or natural resources because ıf the sub-project activities.
Is this sub-project intervention requiring private land acquisitions?	☐	☒	The property is allocated for the municipality.
If the land parcel has to be acquired, is the actual plot size and ownership status known?	☐	☒	-
If new land is required and the site is privately owned, can this land be purchased through Willing Buyer–Willing Seller agreement?	☐	☒	-
Will the sub-project require the acquisition of public lands?	☐	☒	-
If public lands will be acquired, are there any formal/informal users utilizing these	☐	☒	-

[2] Internationally recognized areas of high biodiversity value include World Heritage Natural Sites, Biosphere Reserves, Ramsar Wetlands of International Importance, Key Biodiversity Areas, Important Bird Areas, and Alliance for Zero Extinction Sites, among others.

lands for income generation purposes?			
Will there be loss of/damage to productive trees, fruit plants or crops that generate livelihood income for the households?	☐	☒	There is no productive trees, fruit plants or crops in the land where the SPP subproject will be built
Is there any soil contamination observed at the sub-project area?	☐	☒	Currently, no soil contamination observed, but monitoring measure will be applied to control over.

Impacts of sub-project (in case of rooftop solar sub-project only):			
Will the sub-project affect the daily operation of the building and people?			
Is the building protected under the law for the protection of cultural heritage?			
Is the building of special significance to any vulnerable group (i.e. disabled people, minorities, youth, etc.)?			

Environmental and social/impacts related to sub-project construction/installation			
	Yes	**No**	**Details**
Will the sub-project involve the use of forest trees or other natural resources as building materials?	☐	☒	The sub-project does not involve the use of forest trees or other natural resources as building materials.
Will the sub-project emit greenhouse gases (CO_2, NOx, O_3) or ozone-depleting substances (CFC, methyl bromide, etc.)?	☐	☒	The sub-project will not emit greenhouse gases
Will the sub-project use, produce, or discharge hazardous and toxic materials (e.g., hospital waste, industrial waste, or other?)	☐	☒	
Will the sub-project produce or cause occupational hazards?	☐	☒	Related measures are planned in this ESMP, and they will be taken into consideration
Will the sub-project cause dust and noise pollution?	☒	☐	The sub-project would cause dust and noise only in construction phase. Measures related to this issue has been developed in this ESMP. In the operational phase there will be no dust and noise.
Will the sub-project cause water pollution?	☐	☒	-
Will the sub-project cause soil pollution?	☐	☒	-
Will the sub-project result in temporary disruption to the livelihoods of any persons/households?	☐	☒	-
Will the sub-project cause community safety-related hazards?	☐	☒	-
Will the sub-project include significant OHS concerns?	☐	☒	Related measures are planned in this ESMP, and they will be taken into consideration
Will the sub-project cause additional traffic load?	☒	☐	The sub-project would cause traffic load in construction phase. In

			operational phase there will be no traffic load originated from the sub-project.
Will the sub-project cause any adverse impact on the closest sensitive receptors (if there is any)?	☐	☒	-
Is there a population that can be negatively affected by the sub-project?	☐	☒	No population in the lot where subproject will be built
Other environmental or social impacts (describe the nature and severity of its impact)	*Preparatory phase:* *Construction phase:* *Operation phase:*		

According to OP4.01, OP 4.10 and OP 4.12 of World Bank, the following social safeguard documents shall be prepared for the subproject:

1. According to the Environmental screening checklist above the subproject is in Category low B in terms of risk. and reccomendations of World Banks that is Category low B project does not need environmental management plan, and does not need to take environmental protection measures to mitigate the impact, however, in any situtation, a simplified ESMP has been prepared. In this regard, it reveals that the World Bank has not triggered the relevant safeguards policies, except for this simplified ESMP.
2. According to the social screening checklist above, there is no reason to trigger World Bank Social Safeguard Documents such as Resettlement Action Plan, Reemployment Plan, Job Transfer Training.