Environmental and Social Management Plan (ESMP) Checklist

for 1,228.77 kWp / 999 kWe Solar Power Plant of

Gürsu Municipality

Date of Issue: 26 August 2025

Document History

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v1	ILBANK	May 16, 2025	Draft
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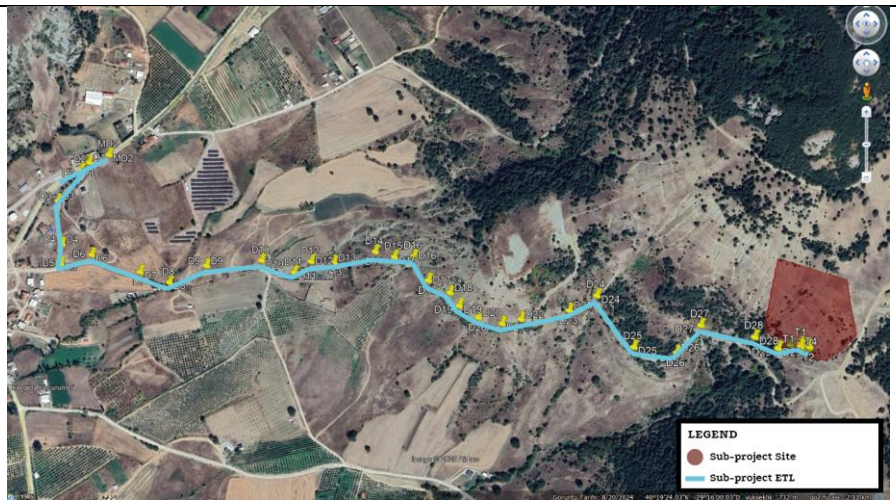
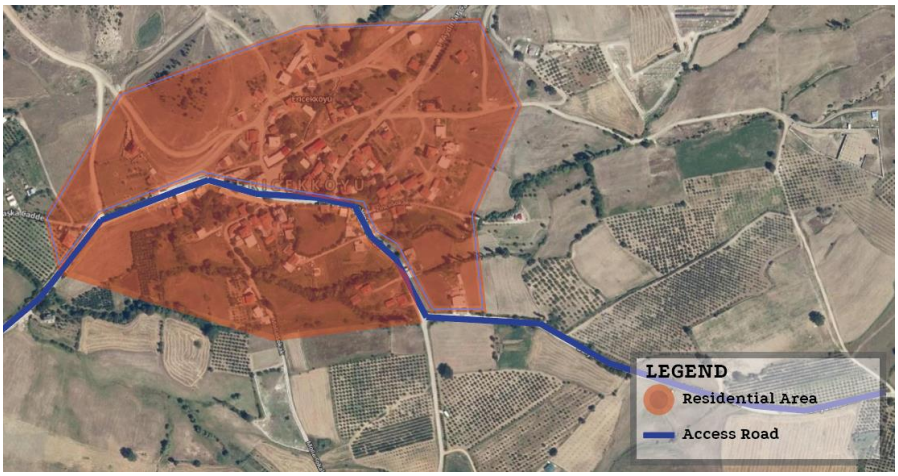
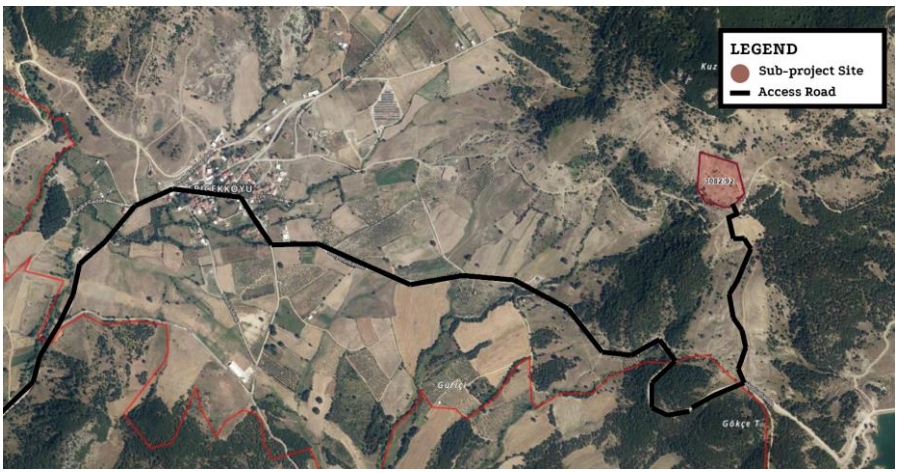
This document has been prepared by ÇA Engineering Company.

Environmental and Social Management Plan (ESMP) Checklist

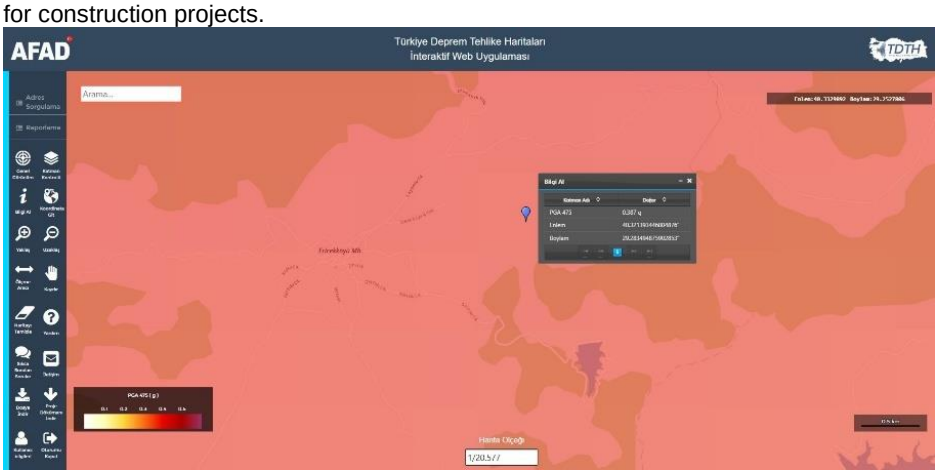
Part 1: General Subproject and Site Information

1.a) General	
Associated ILBANK Project	Türkiye Public and Municipal Renewable Energy Project (PUMREP)
International Financial Institution (IFI) Financing the Project	The World Bank
Project's E&S Risk Classification according to WB ESF (2018)	Moderate
Subproject Title	Gürsu Municipality 1,228.77 kWp / 999 kWe Solar (Photovoltaic) Power Plant (SPP)
Sub-borrower Name	Gürsu Municipality
Responsible ILBANK Regional Directorate (RD)	Bursa Regional Directorate
Subproject's E&S Risk Classification according to ILBANK ESMS (2023)	Moderate
Subproject Location	**Province**: Bursa **District**: Gürsu **Neighborhood:** Ericekköyü **Block/Parcel no**:3082/92
Scope of Subproject and Activity *(in case of any changes of the subproject please fill Appendix-12 and submit to ILBANK)*	**Technology (e.g. Photovoltaic, monocrystalline, polycrystalline, thin film, bi-facial, tracking system, etc.):** monocrystalline **Installed power**: 1.228.77 kWp **Connection power**: 999 kWe **Annual electricity generation**: 1,656 MWh/ year **Construction Duration: Approximately** 2 months **Operation Duration (Economic life of the Plant):** 25 years **Number of Construction Workers (at peak, including contractors and subcontractors):** 10 **Number of Operations Workers (at peak):**2 **Planned accommodation:** Off-site (Rented houses in nearby settlements)
Energy Transmission Line (ETL)	**Grid connection:** will be established by linking to the Gemlik TM transformer station. **Status of transformer station: To be** built [Existing or to be built] **Energy transmission line (ETL)**: There will be ETL construction 1) An ETL will be constructed. The technical information on the ETL is provided below: Transformer station: Gemlik TM Length of the route: 1.8 km (1700 m will be overhead line and 100 m underground line) Voltage level:36 (kV)

	 *Figure 1. Subproject ETL*
Access Roads	There is an existing access road to the sub-project site. The existing road is sufficient for the transportation of equipment to the site and there is no need for new road construction or road improvement works. The access road passes through Ericekköyü neighborhood. There are no sensitive structures such as school, health center and fire departments on the route. The access route to the sub-project area is given in Figure 2.   *Figure 2. Subproject Access Road*
Other Associated Facilities: Are there any other	No

associated facilities that are not funded as part of the Subproject and are (a) directly and significantly related to the Subproject, (b) carried out, or planned to be carried out, contemporaneously with the Subproject, and (c) necessary for the Subproject to be viable and would not have been constructed, expanded or conducted if the Subproject did not exist?	
Existing Permits	**1.** The ownership of the sub-project area belongs to Gürsu Municipality. The title deed was shared on Appendix-4. Copies of Title Deed(s) **2.** In accordance with the Turkish EIA Regulation published on 29.07.2022, there is an EIA Out of Scope decision dated 04.05.2024 and numbered E-56607814-220.03-9577408 (See Appendix-3. EIA Out of Scope Decision) for the sub-project by the Bursa Governorship Environment, Urbanization and Climate Change Provincial Directorate. **3.** The sub-project area is located within the boundaries of the 1/1000 Scale Zoning Plan of Ericekköyü Neighborhood, Gürsu District, Bursa Province, and pertains to parcel 3082/92 on map sheet H22B16C1B, as per decision No. 86 dated 05.06.2024. (Appendix-2. Zoning Plan)
1.b) Site Description	
Subproject Area	The parcel has an area of 18,523 m^2 and 13,986 m^2 will be used for the subproject area. Number of parcels to be used: 1 Total title deed area of the parcel: 18,523 m^2 Total area to be used by the Subproject (within the fence area): 13,986 m^2 Appendix-1. Site Map**:** Site Map Appendix-5. Photographic Log**:** Photolog
Who owns the land? Since when?	The lot on which the sub-project will be established belongs to Gürsu Municipality as of 03.02.2022. Appendix-4. Copies of Title Deed(s): Title Deed
Land Registry Type according to Title Deed (agricultural, pasture, vacant, etc.)	Field
Current Land Use (are there any formal or informal agricultural users, herders, etc.)	The lot is not used by any official, unofficial users or third parties.
Other Nearby Facilities and Activities Are there other industrial or commercial activities operated/operating or planned by the Sub-borrower itself or other public or private third-parties in the vicinity of the Subproject or its components/associated facilities?	There are no industrial or commercial activities being carried out or planned by the sub-loan beneficiary in the vicinity of the sub-project site. In addition, there is no information on any industrial or commercial activities being conducted or planned by public institutions or private third parties in the adjacent areas or the close vicinity of the sub-project site.

Area of Influence	The sub-project is located in the Ericekköyü Neighborhood. The subproject site is approximately 1,350 meters away from the neighborhood. The access road passes through Ericekköyü Neighborhood. There are no structures providing emergency access services such as health center, school or fire departments in the neighborhood. Within the scope of sub-project activities, the area of influence (AoI) was defined based on a combination of environmental and social factors, including the proximity of the sub-project site, the route of the access road, potential dust emissions, construction-related noise, and anticipated social impacts such as changes in local employment dynamics, accessibility, and potential disturbances to the daily life of local communities. This identification also incorporated field observations and consultations conducted during the site visit on 02.05.2025 by CA Engineering Project Manager and Agricultural Engineer. Access road to the sub-project site is not expected to adversely affect vulnerable and disadvantaged groups, as there are no public facilities along the route and no such groups have been identified in the households located on the access road. This information has been confirmed through consultations with the local mukhtar. Within the scope of the interviews conducted with the local people; it was learned that the dry stream beds located approximately 200 meters southwest and approximately 750 meters southeast of the sub-project area have limited water flow due to seasonal rainfall, and are dry for most of the year. The stream beds in question are not used by the local people for irrigation, drinking or any other purpose, and based on initial field observations, they do not present visible ecological sensitivity or host aquatic ecosystem. However, in the line with international good practices such as IFC Performance Standard 6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources), seasonal or ephemeral watercourses can play a critical role in supporting biodiversity, especially in semi-arid regions. In line with this information; Ericek Lake and the recreation area around Ericek Lake located approximately 850 meters southeast in Ericekköyü Neighborhood are the closest potentially affected receptors of the sub-project. According to the construction phase dust emissions and environmental noise calculations explained in detail in the Appendix-13. Emissions and Environmental Noise Calculations, the noise levels that will occur at the sub-project site are dampened after a distance of 50 m and remain below the 65 dBA noise level limit value specified in Table 1 of Annex II of the "Environmental Noise Control Regulation" published in the Official Gazette dated 30.11.2022 and numbered 32029. The sub-project area of influence is shared in Figure 3. Although the limit value meets the limits of the relevant national regulation, it is above the limits specified in WBG General EHS guidelines. The calculations were made assuming that all equipment will operate simultaneously. In real life, lower environmental noise levels are expected. In addition, in case of any complaints about noise, measurements will be taken to determine the environmental noise level caused by construction work and if it is high, additional measures such as barriers, arrangement of working hours, etc. will be taken. Since the dust emission that will occur as a result of the calculations made under controlled conditions for the construction phase remained below the 1.0 kg/hour value given in Annex 2 of the Regulation on Control of Industrial Air Pollution, which was published in the Official Gazette dated 03.07.2009 and numbered 27277 and entered into force, there was no need to conduct air quality modeling studies. Therefore, the noise impacts of the subproject are not expected to exceed significant levels beyond a 50-meter radius, and the traffic impacts are anticipated to remain confined within the subproject site, without extending into the surrounding Ericekköyü neighborhood. In addition to these environmental considerations, potential social impacts such as changes in local employment dynamics, accessibility issues, and possible disturbances to daily life of nearby households have also been taken into account. Accordingly, the AoI has been determined by considering both environmental and social factors together.

	 *Figure 3. Subproject AoI*
Description of geographic and physical characteristics as appropriate.	The planned solar power plant will be located in Ericekköyü Neighborhood of Gürsu district, Bursa province, which is a rural inland area that benefits from high solar radiation and is a suitable area for solar energy production. Geographically, the region experiences a continental climate with long, sunny periods, particularly in summer, enhancing the efficiency of solar panels. The physical environment predominantly consists of steppe vegetation and sparse tree cover surrounding the site. According to the data obtained from the Türkiye Earthquake Hazard Maps Interactive Web Application for the sub-project area, the PGA 475 (g) value was determined as 0.387 g. This value indicates the horizontal peak ground acceleration (PGA) value with a return period of 475 years. The PGA value of 0.387 g indicates that the region has a high seismic hazard. In this context, appropriate engineering measures should be taken for construction projects.  *Figure 4. Sub-project Seismicity Map (https://tdth.afad.gov.tr/TDTH/)*
Cultural Heritage	The closest cultural heritage site to the sub-project area is Cumalıkızık Village, located approximately 18 kilometers to the southwest. This foundation village, known for its narrow streets and characteristic wooden houses, is a well-preserved example of 19th-century Ottoman rural architecture. Cumalıkızık is officially recognized as a UNESCO World Heritage Site. The map showing the nearest cultural heritage is given in Figure 5.

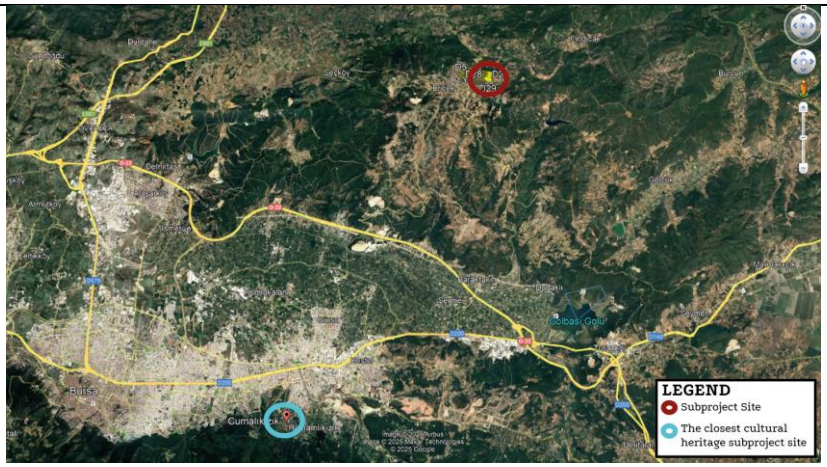
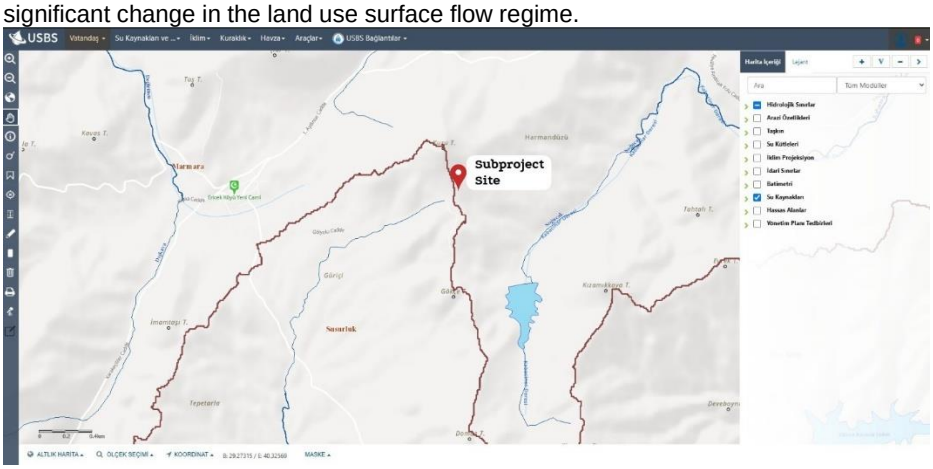
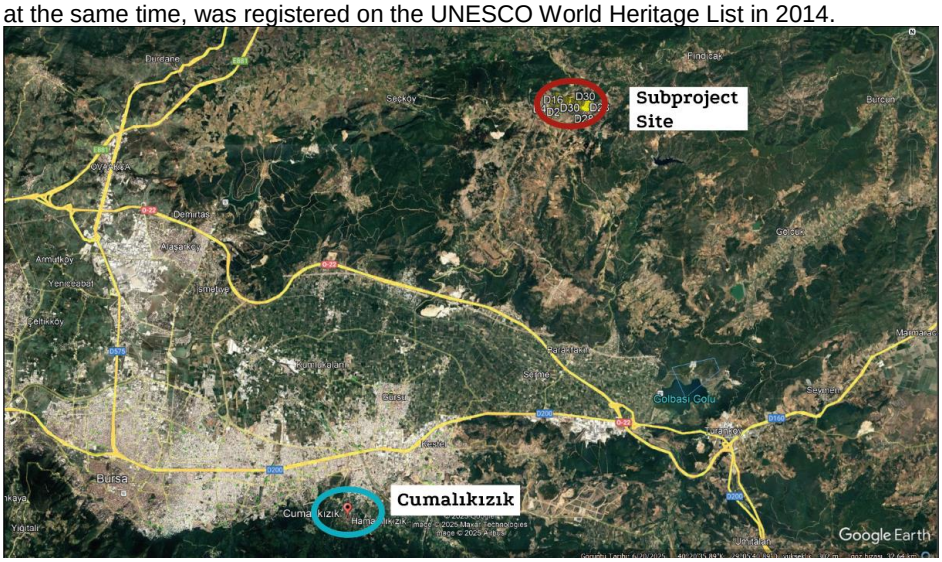
	 *Figure 5. The closest cultural heritage subproject site*
Description of biological characteristics as appropriate.	Although SPP projects generally have low environmental impact, detailed ecological assessments are made during site selection in order not to harm biodiversity. The flora and fauna species identified as a result of studies conducted in the sub-project area of influence (AoI) are given in **Hata! Başvuru kaynağı bulunamadı.** Literature and field studies were carried out by ÇA Engineering Agricultural Engineer to determine the flora and fauna species present or likely to be present within the area (AoI). Additionally, during the site visit conducted by Biologist Teyfik Artun on 21 October 2025, the flora and fauna components were observed on-site. ***Flora*** There are trees within the sub-project area borders that reflect the floristics of the region. These species they are not endemic. These species were given IUCN and Bern statuses in Appendix-12. Biological Characteristics. Within the scope of the sub-project application, these trees will be cut and in order to compensate for the trees, new trees will be planted at least as much as the number of trees to be cut. It was determined during the field visit that there were 48 trees on the site, and this was then confirmed with the municipality. The planting activity in question will be carried out within the boundaries of Ericekköyü Neighborhood. This issue was recorded with the Commitment Appendix-14. Tree Planting Commitment Letter given by Gürsu Municipality. ***Fauna*** Based on field studies and consultations with local stakeholders, the fauna species frequently observed in and around the project area include *Lepus europaeus* (European hare), *Vulpes vulpes* (Red fox), *Buteo buteo* (Common buzzard), *Corvus cornix* (Hooded crow), and *Lacerta viridis* (European green lizard). These species do not have endemic status within Türkiye. Their conservation statuses according to the IUCN Red List, Bern Convention, and national legislation are provided in Appendix-12. Biological Characteristics In addition, the sub-project area is located on bird migration routes. The precautions to be taken in this regard are given in the ESMP Matrix.
Description of geological and hydrographic characteristics as appropriate.	The selected subproject site's geological and hydrographic characteristics play a crucial role in assessing the feasibility and sustainability of the solar power plant. The geological conditions, including soil composition, bedrock stability, and seismic activity, influence the foundation design and construction process. Additionally, hydrographic features such as surface water bodies, groundwater levels, and drainage patterns are evaluated to ensure minimal impact on local water resources. This section provides an overview of the site's geological and hydrographic attributes, highlighting any relevant environmental considerations for the subproject development. ***Geological Characteristics*** The geological structure of the sub-project area consists mainly of metamorphic rocks, Neogene sedimentary formations and Quaternary alluviums.

	 *Figure 6. Subproject Site Corine 2018 Map (Ministry of Agriculture and Forestry National Water Information System)* ***Hydrographic Characteristics*** There are two dry stream beds approximately 200 meters southwest of the sub-project area and approximately 750 meters southeast. Temporary surface water flows are observed in these stream beds as a result of seasonal snow melt and precipitation. In addition, Ericek Lake is located approximately 850 meters southeast of the sub-project area. The surface water resources in question do not have a significant impact potential in terms of SPP implementation. SPP activities are not planned to cause any physical intervention in these natural surface water formations and it is not expected to cause a significant change in the land use surface flow regime.  *Figure 7. Subproject Site Water Resources Map (Ministry of Agriculture and Forestry National Water Information System)* During the field survey for the subproject, a dry stream bed was observed showing signs of runoff and gully erosion (See Appendix-5. Photographic Log). Although this area remains dry under normal conditions, it acts as an active drainage pathway during heavy rainfall events. Therefore, it should be considered a hydrologically sensitive area. To minimize potential impacts, project activities will prevent blocking or altering of this drainage pathway. Additional erosion control and stormwater management measures will be considered as necessary.
Description of socio-economic characteristics as appropriate.	The majority of the population residing in Ericekköyü Neighborhood, which is within the impact area of the sub-project, consists of retired individuals who have settled in the neighborhood. However, a significant portion of the remaining population engages in agriculture and animal husbandry as their primary sources of income. According to TurkStat data published in February 2025, the total population of the neighborhood is 168. During the summer months, approximately 50 individuals temporarily reside in the village for holiday purposes or seasonal agricultural activities. During consultations with neighborhood residents, it was noted that there are no health or education facilities within the Ericekköyü neighborhood. Residents rely on schools and healthcare services located 22 km away. A shuttle service is available for students

	commuting to school. As stated in the official letter No. E-17098436-252.99-8348942 from the Provincial Directorate of Environment, Urbanization, and Climate Change, the sub-project area does not fall within any existing approved natural site or special environmental protection area (See Appendix-15. Opinion of the Provincial Directorate of Protection of Natural Assets). The closest cultural heritage site to the subproject site is Cumalıkızık Village, located 18 km southwest (Figure 8). Bursa, the first capital of the Ottoman Empire, was established on the northwestern slopes of Uludağ. Cumalıkızık, which was established as an Ottoman foundation village at the same time, was registered on the UNESCO World Heritage List in 2014.  *Figure 8. The closest cultural heritage* During consultations with neighborhood residents, it was identified that there are 10 individuals over the age of 70 living alone, 10 female-headed households, 1 individual with a mental disability, 2 individuals with physical disabilities, and 6 individuals who are seeking employment but unable to find work. In total, 29 individuals were identified as belonging to vulnerable groups.
If relevant, provide information about the affected settlements.	Closest settlement(s): - Ericekköyü neighborhood, approximately 1350 meters away (air distance) (with 168 population, according to TurkStat, 2024) Closest structure(s) to the Subproject site: - Ericek Lake is a recreation area located in Ericekköyü neighborhood at 850 m southeast of the Subproject site.
Locations and distance to nearest sensitive receptors such as health care units, schools?	The nearest sensitive receptor is Ericek lake 850 meters away. Health services and schools are 22 km away from the sub-project site There are no healthcare, education, or emergency facilities located along the access road.
Infrastructure services to be used during the life cycle of the subproject (sewage, electricity, water network, etc.)	Due to the subproject location, electricity, water will be supplied from the Gürsu Municipality infrastructure networks. No need to construct/renew infrastructure services due to subproject activities.
1.c) E&S Requirements applicable to the Subproject	
The subproject will be implemented in line with requirements of applicable national legislation and international agreements and conventions to which Türkiye is a party of. The following international standards will also be followed as applicable: - WB Environmental and Social Framework (ESF, 2018) and the Environmental and Social Standards (ESSs)	

forming part of the ESF
- Good International Industry Practices (GIIPs) including but not limited to WB Group (WBG) General and Industry Sector Environmental, Health and Safety Guidelines[1] (EHSGs)
- International Finance Corporation (IFC) ESMS Implementation Handbook
- ILBANK Environmental and Social Management System (ESMS)

In cases where the requirements of the ILBANK ESMS or national legislation differ from those of the WB ESSs or the levels and measures presented outline in the relevant WBG EHS guidelines, the more stringent standard will apply.

Part 2: Implementation Arrangements

2.b) Implementation Responsibility and Resources

The sub-borrower shall implement and cause the contractor to be adopt and implement this ESMP Checklist satisfactory to ILBANK throughout the sub-financing agreement life cycle.

The sub-borrower is responsible for ensuring that adequate financial and human resources are allocated for the effective implementation of this ESMP Checklist.

Roles and Responsibilities are provided in Appendix-9. Roles and Responsibilities

2.c) Organizational Capacity

Sub-borrower:

The sub-borrower shall establish an organizational structure (Project Implementation Unit – PIU) with qualified staff and resources to the satisfaction of ILBANK and maintain it by ensuring that there is qualified staff assigned and serving on the duty throughout the sub-financing agreement life cycle.

The sub-borrower assigns the following personnel to support management and monitoring of subproject E&S risks and impacts and ensure full compliance with the requirements of this ESMP Checklist:

- **Environmental Focal Point:** Ümran Ateş, Environmental Engineering, 15 years
- **Social Focal Point (**(who will also act as the Grievance Mechanism (GM) Focal Point)**:** Berkay Yamakoğlu, Social Specialist, 10 years
- **Occupational Health and Safety (OHS) Specialist**: Talha Şahin, OHS Specialist, 10 years, C class

Contractors:

The sub-borrower shall obligate awarded contractors to establish and maintain throughout the contract duration an organizational structure with qualified staff and resources.

This shall be achieved through assigning the following personnel under the contractor's organization prior to commencement of works:

- **One (1) Environmental Specialist:** Please insert name-surname, position/title, length of professional experience
- **One (1) Social Specialist:** Please insert name-surname, position/title, length of professional experience
- **One (1) Occupational Health and Safety (OHS) Specialist:** Please insert name-surname, position/title, length of professional experience, expertise class

The sub-borrower shall in writing notify ILBANK of the assigned contractor personnel prior to commencement of works.

2.d) Monitoring and Reporting

The sub-borrower shall promptly notify ILBANK of any incident or accident related to the subproject which has, or is likely to have, a significant[2] adverse effect on the environment, the affected communities, the public or workers, including, inter alia, cases of sexual exploitation and abuse (SEA), sexual harassment (SH), and accidents that result in death, serious or multiple injury.

[1] https://www.ifc.org/en/insights-reports/2000/general-environmental-health-and-safety-guidelines

[2] Any incident or accident relating to the subproject which has, or is likely to have, a significant adverse impact on the environment and/or health and safety of communities or employees (direct or contracted) involved in the subprojects related operations will be considered significant, including, inter alia, chemical and/or hydrocarbon materials spills; fire, explosion or unplanned releases, including during transportation; ecological damage/destruction; traffic or other type of accidents that could result in fatalities or serious injuries affecting employees and/or public complaint or protest; failure of emissions or effluent treatment; legal/administrative notice of violation; penalties, fines, or increase in pollution charges; negative media attention; chance cultural finds; labor unrest or disputes; local community concerns.

This notification shall be done by using ILBANK's E&S Incident Notification Form template (see Appendix-11. Change Notification Form). Completed E&S Incident Notification Form shall be submitted to ILBANK by the sub-borrower within **48 hours** of the incident or accident (contractor shall notify the sub-borrower within **24 hours** of the incident or accident).

The periodic E&S monitoring reporting requirements for the subproject is as follows:

- Construction contractor will prepare **monthly** E&S monitoring reports (ESMRs) and submit to supervision consultant ("*müşavir*").
- During the **construction** phase, the sub-borrower, with support from supervision consultant, will prepare **quarterly** ESMRs and submit to ILBANK.
- During the **operation** phase (throughout sub-financing agreement lifecycle, until the completion of repayment period), the sub-borrower will prepare **annual** ESMRs and submit to ILBANK.

ILBANK will provide the sub-borrower with the required template for the periodic ESMRs.

The Roles and Responsibilities are provided in Appendix-9. Roles and Responsibilities

Part 3: ESMP Matrix: Risk and Impacts, Mitigation and Monitoring

3.a) Construction ESMP Matrix

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
Labor and Working Conditions				
1.	Working Conditions	Construction workforce Employees	• Conduct daily toolbox talks covering the OHS Plan and labor conditions and record it for display on demand. • Develop and implement a subproject-specific simplified Labor Management Procedure (SLMP, see Appendix-8. Simplified Labor Management Procedure) to ensure compliance in recruiting and managing all employees. • Enforce strict prohibition of child labor, forced labor, and unregistered labor as per SLMP requirements. • Workers will be provided with documented information that is clear and understandable regarding their rights under national labor law, including collective agreements, and their rights related to hours of work, wages, overtime, compensation, and benefits at the start of the working relationship and whenever any material changes occur. • Recruitment procedures will comply with national labor legislation and ESS2, and an accessible grievance mechanism for workers will be implemented and maintained.	Gürsu Municipality Supervision Consultant Contractor
2.	General OHS risks	Construction workforce	• Develop a comprehensive **risk assessment document** for sub-project, addressing specific risks and defining mitigation measures and work permit procedure must be applied. • Ensure that all employees, including subcontractors, receive necessary OHS training covering identified risks. • Prepare sub-project management plans, including Safe Work Procedures and an **Emergency Response Plan**. • Emergency scenarios should be determined for all possible risks and every employee should receive training on these scenarios. • Enforce safety procedures and provide appropriate PPE to all employees. • Incorporate job-specific safety procedures and requirements in OHS training programs. • Prepare machine and operation specific “Safe Working Procedures” for all safety critic equipment and machinery and notify all workforce by signature. • Serious safety issues that may arise with primary suppliers and primary supply workers will be managed as described in the Occupational Health and Safety Sub-Management Plan, which will cover primary supply workers to the extent necessary. • Written contracts will be provided to subcontractors, setting out detailed job	Gürsu Municipality Supervision Consultant Contractor

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
			descriptions, rights and obligations, and a Code of Conduct. • In case of OHS accidents that are reported to the Social Security Institution (SGK) in accordance with national legislation—including incidents resulting in loss of life, loss of limbs or eyes, or any degree of work incapacity—the Contractor shall immediately notify both SGK and ILBANK (within 24 hours), and subsequently complete the Environmental and Social Reporting Template (ESRT) forms, in line with ILBANK's instructions. This process shall also include root cause analysis and corrective action plan.	
3.	Physical Hazards: Lifting Operations OHS Risks	Construction workforce	• Ensure that lifting area will be enclosed with fence to prevent access to the lifting area during lifting work. • Ensure that warning signs will be installed for lifting activities • Ensure that safety procedures will be used for lifting operations. • Ensure that lifting work will be carried out by well trained, qualified, and certified lifting team and with proper communication means and flag man. • Ensure that workers will be provided with all necessary PPE and safety materials. • Ensure all equipment used for lifting operations including slings, chains and hooks are checked technically and records are kept according to local safety legislation. • Ensure that tools are selected and designed that reduce force requirements and holding times and improve postures. • Ensure that user-adjustable workstations are provided. • Ensure that rest and stretch breaks are incorporated into work processes and job rotation is in place. • Ensure that quality control and maintenance programs are in place to reduce unnecessary forces and effort, and personnel are trained in proper manual handling techniques. • Ensure that additional special circumstances, such as left-handed people, are considered.	Gürsu Municipality Supervision Consultant Contractor
4.	Physical Hazards: Rotating and Moving Equipment	Construction workforce	• Design machines to eliminate trap hazards and ensure that extremities are kept out of harm's way under normal operating conditions; i.e. availability of emergency stops dedicated to the machine and placed in strategic locations; • If a machine or equipment has an exposed moving part or an exposed pinch point that could endanger the safety of any worker, ensure that the machine or equipment is equipped with and protected by a guard or other device that prevents access to the moving part or pinch point. Guards should be designed and installed in conformance with appropriate machine safety standards; • Ensure that machinery with exposed or protected moving parts or in which energy can be stored (e.g. compressed air, electrical components) is turned-off, disconnected, isolated and de-energized (Locked Out and Tagged Out)	Gürsu Municipality Supervision Consultant Contractor

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
			during service or maintenance; • Where possible, ensure that equipment is designed and installed to enable routine servicing, such as lubrication, to be carried out without removing guarding devices or mechanisms.	
5.	Physical Hazards: Electrical Hazards	Construction workforce	• No one without a valid certification on vocational training on electricity will be allowed to work on electrical installations. • Ensure that all energized electrical devices and lines are marked with warning signs; • Ensure that the devices are locked (de-charging and leaving open with a controlled locking device) and labeled (warning sign placed on the lock) during service or maintenance; • Ensure that all electrical cords, cables, and hand power tools are checked for frayed or exposed cords. Also, ensure that the manufacturer's recommendations for the maximum permitted operating voltage of portable hand tools are followed; • Insulating mats should be placed under electrical panels, including portable panels. • Ensure that portable electrical appliances are “portable electrical appliance tested (PAT)” • Ensure that all electrical equipment used in environments that are or may be wet is double insulated/grounded; use equipment with ground fault interrupter (GFI) protected circuits; • All panels will be equipped with a residual current relay. • Ensure that power cords and extension cords are protected against damage from traffic by shielding or suspending above traffic areas; • If extension cables are to be used, they should be selected according to the current they need to carry and the length of the cable. Extension cables are for temporary use. Outdoor extension cables should be used. • Ensure that high-voltage equipment ('electrical hazard') and service rooms where access is controlled or prohibited are properly labeled; • Ensure that "No Approach" zones are established around or under high voltage lines; • Ensure that construction vehicles or other vehicles with rubber tires that come into direct contact with or arc across high-voltage cables are taken out of service for 48 hours; • Ensure that all buried electrical cables are thoroughly identified and marked prior to any excavation work. • Ensure that special training programs are organized for employees on electrical hazards and safety precautions. • Ensure that rapid response teams and emergency plans are established for electrical accidents.	Gürsu Municipality Supervision Consultant Contractor

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
			• Ensure that regular electrical safety inspections are conducted in the project area. • Ensure that periodic inspections are conducted to ensure that employees use appropriate personal protective equipment (PPE). • Fire extinguishers containing CO_2 will be provided for possible electrical fires.	
6.	Physical Hazards: Welding and Hot Works	Construction workforce	• Ensure that appropriate eye protection, such as welder's goggles and/or a full-face shield, and respiratory protection is provided for all personnel involved in or assisting with welding operations; • If welding or hot cutting is performed outside of established welding work stations, ensure that special hot work and fire prevention precautions and Standard Operating Procedures (SOPs) are in place, including "Hot Work Permits, stand-by fire extinguishers, fire blanket, stand-by fire watch and maintaining fire watch for up to one hour after welding or hot cutting is finished"; • Ensure that areas where welding or hot work is performed are cleared of flammable materials (e.g. fuel, solvent, spark-ignitable materials) and should be checked regularly. • Ensure that all employees are trained and informed about welding operations and the safe management of hot work. • Ensure that welding work is only carried out by employees who have the appropriate professional qualification (aluminum, steel, resistance etc.)	Gürsu Municipality Supervision Consultant Contractor
7.	Fire Safety Prevention Measures and Emergency Response	Construction workforce Flora and fauna Soil, water resources	• Prepare an Emergency Response and Evacuation Plan before the commencement of works. • Ensure all employees are trained for their responsibility to report dangers and firefighting measures • Ensure that all flammable and hazardous materials are stored in designated, secure areas away from ignition sources. • Ensure firefighting systems and equipment are available • Ensure fire and emergency drills are conducted regularly. • Designate trained fire wardens for each area to lead evacuations and coordinate with emergency responders. • Keep an up-to-date list of emergency contacts, including local fire departments and hospitals, for quick access in case of fire. • Make sure that there are enough first aiders in the first aid regulations for the workplace hazard class.	Gürsu Municipality Supervision Consultant Contractor
8.	Physical Hazards: Ergonomics, Repetitive Motion, Manual Handling Lifting	Construction workforce	• Establish clear weight limits for manual handling tasks and label heavy loads accordingly; • Ensure that mechanical assists are used to eliminate or reduce the effort required to lift materials, hold tools and work objects, and that more than one person is lifting if weights exceed thresholds;	Gürsu Municipality Supervision Consultant Contractor

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
			• Ensure that tools are selected and designed that reduce force requirements and holding times and improve postures; • Ensure that user-adjustable workstations are provided; • Ensure that rest and stretch breaks are incorporated into work processes and job rotation is in place; • Ensure quality control and maintenance programs are in place that reduce unnecessary forces and effort; • Ensure that additional special circumstances, such as left-handed people, are considered. • Whether a new employee can carry heavy loads should be determined during a health check by the workplace doctor. Make sure that these jobs are performed by people who are approved.	
9.	Physical Hazards: Industrial Vehicle Driving and Site Traffic	Construction workforce	• Ensure that industrial vehicle operators are trained in the safe use of specialized vehicles such as forklifts, including safe loading/unloading, load limits; • Make sure that they have a certificate of competence (driver's license, operator's certificate, etc.) from authorized institutions and organizations according to the type of work machine. • Make sure drivers undergo medical supervision; • Ensure that moving equipment with restricted rear visibility is equipped with audible back-up alarms; • Ensure that rights of way, site speed limits, vehicle inspection requirements, operating rules and procedures, and control of traffic patterns or direction are established; • Ensure that deliveries and movement of private vehicles are restricted to defined routes and areas, with 'one-way' movement preferred where appropriate. • While the work equipment is in motion, it is prevented that anyone approaches the blind spots of the equipment. In cases where this cannot be achieved, object detection systems or warning systems are used. If this cannot be achieved either, a signal is used, coordination is ensured with the people around, or no one is allowed to enter the work area.	Gürsu Municipality Supervision Consultant Contractor
10.	Physical Hazards: Chemical Hazards	Construction workforce Flora and fauna Soil, water resources	• Ensure that the hazardous substance is replaced with a less hazardous substitute; • Ensure that engineering and administrative control measures are in place to prevent or minimize the release of hazardous substances into the working environment, keeping the exposure level below internationally established or recognized limits; • Ensure that the number of workers exposed or likely to be exposed is minimal; • Ensure that chemical hazards are communicated to workers through labeling and marking according to nationally and internationally recognized	Gürsu Municipality Supervision Consultant Contractor

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
			requirements and standards, including International Chemical Safety Cards (ICSC),Safety Data Sheets (SDSs) or equivalent. Any means of written communication should be in an easily understood language and be readily available to exposed workers and first-aid personnel;; • Ensure that employees are trained in the use of available information (such as Safety Data Sheet), safe working practices and proper use of PPE. • Ensure workers have access to suitable personal protective equipment (PPE), such as gloves, respirators, goggles, and protective clothing, based on the specific chemical hazards. • Store hazardous substances in designated areas with appropriate ventilation, labeling, and secure containment to prevent accidental exposure or spills. • Provide chemical overflow pallets and store chemical containers by placing them on them. • Develop and implement a spill response plan, as part of the Emergency Response Plan, including containment measures, chemical spill/leak response drills, cleanup procedures, hazardous substance disposal, and emergency contact information. • Dispose of chemical waste according to regulations to prevent environmental contamination and worker exposure. • Regularly inspect and maintain chemical handling equipment, storage areas, and PPE to prevent leaks or accidental releases.	
11.	Gender-Based Violence (GBV); Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) on Employees; Gender Inequality	Construction workforce	• Provide GBV and SEA/SH awareness sessions for the management teams of the construction contractor and consultants to promote understanding and accountability. • Conduct regular awareness meetings with workers to educate them on GBV and SEA/SH issues and the importance of respectful workplace conduct. • Ensure all workers receive training on recognizing, preventing, and responding to GBV and SEA/SH incidents. • Require all workers to review, sign, and adhere to a Code of Conduct that explicitly addresses unacceptable behaviors related to GBV and SEA/SH. • Implement a confidential and accessible grievance mechanism specifically designed to capture and address GBV and SEA/SH-related complaints in a timely manner.	Gürsu Municipality Supervision Consultant Contractor
Resource Efficiency and Pollution Prevention and Management				
12.	Waste Management - General	Communities Construction workforce Flora and fauna Soil, water resources	• Separate waste at the source into waste categories determined in Waste Management Regulation, establish temporary waste storage area • Place labeled bins for each type of waste at strategic locations on-site to ensure correct disposal by workers. • Implement practices to reduce waste generation by optimizing material use and reusing materials where possible.	Gürsu Municipality Supervision Consultant Contractor

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
			• Contract with local recycling facilities to ensure that recyclable materials (e.g., metals, paper, plastic) are properly processed. • Store waste in designated, secured areas to prevent littering, leaching, and environmental contamination. • Use leak-proof containers for hazardous or liquid waste and ensure they are adequately labeled. • Contract with licensed waste disposal companies to handle non-recyclable and hazardous wastes in accordance with Waste Management Regulation. • Track and document the disposal process to ensure compliance and accountability. • Conduct regular awareness sessions and training for workers on waste reduction techniques, proper disposal practices, and the importance of waste management. • Regularly monitor waste management practices, conduct site inspections, and assess waste volumes to identify areas for improvement. • Establish a reporting system to document waste types, quantities, and disposal methods. • Develop a comprehensive waste management plan that includes waste reduction targets, disposal methods, monitoring schedules, and assigned responsibilities for effective waste management throughout the project. • Use containment systems for waste that poses spill risks, and keep spill kits accessible. Train staff on immediate spill response actions to prevent soil and water contamination. • Conduct maintenance tasks, such as oil changes and battery replacements, off-site; • Ensure that the concrete chips are dumped into the excavation waste area determined by Gürsu Municipality as inert construction waste to be used in road construction or as filling material. • Cable waste contains valuable metals such as copper and aluminum. Therefore, ensure that it is delivered to a licensed recycling company so that its metal and plastic are recycled separately. • Since the vast majority of insulation materials consist of plastic, ensure that it is delivered to a licensed recycling company to ensure raw material recycling.	
13.	Waste Management - Electronic Waste Disposal	Communities Construction workforce Soil and water resources	• Contract with recycling facilities and/or manufacturers to ensure proper disposal or recycling of obsolete equipment; • Agreements will be set with e-waste recycling facilities to ensure responsible disposal of electronic waste from solar panels, inverters, batteries, etc.	Gürsu Municipality Supervision Consultant Contractor
14.	Wastewater Management	Flora and fauna Soil, water resources	• Since there is no direct connection to the Gürsu Municipality sewerage network at the subproject site, septic tanks will be constructed to collect wastewater from the site staff.	Gürsu Municipality Supervision Consultant Contractor

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
			• Regularly dispose/vacuum wastewater in the septic tank to prevent overflow, reduce the risk of contamination, and ensure the proper functioning of the system.	
15.	Soil and Groundwater Contamination	Communities Construction workforce Flora and fauna Soil and water resources	• Contain and clean up any oil, chemical, lubricant, or fuel spill immediately to prevent environmental contamination. • Implement spill prevention and response measures. Maintain spill containment and clean-up kits on-site. Ensure all spills are contained, cleaned, and disposed of by licensed waste management companies. • Conduct routine servicing of construction vehicles and equipment at designated off-site locations to minimize the risk of leaks or spills. • Perform refueling in designated areas following strict protocols to prevent accidental spills. • Collect and store waste oil securely for recycling or dispose of it through licensed waste vendors to ensure safe handling. • Provide adequate sanitary facilities, including toilets and showers, for the construction workforce. Ensure prompt repairs and maintenance in the event of any leaks or spills to maintain hygiene and safety standards.	Gürsu Municipality Supervision Consultant Contractor
16.	Dust and Gaseous Emissions	Communities Construction workforce Flora and fauna Ambient air quality	• Apply water spraying to suppress dust when dusting occurs on roads and construction area. Use water tankers to supply water for this purpose. • Inform communities/residential areas nearby about the schedule and nature of construction activities as part of the Stakeholder Engagement Plan (SEP). • Carry out loading and unloading of trucks carefully to prevent materials from dispersing or scattering. • Cover transport trucks with tarpaulins on public roads when arriving at or leaving the site to minimize dust. Clean truck tires before leaving the site to prevent mud and debris from spreading onto public roads. • Enforce a speed limit for trucks to reduce dust and improve site safety. • Use modern equipment and vehicles that meet relevant emission standards. Regularly inspect and maintain exhaust systems to ensure emission levels remain within safe limits. • Implement good site practices by using low-emission construction equipment and vehicles. Utilize cleaner fuels and technologies to reduce dust and other airborne pollutants. • Implement a grievance mechanism to address community concerns. Halt work in case of grievances until corrective measures are in place.	Gürsu Municipality Supervision Consultant Contractor
17.	Environmental Noise	Communities Construction workforce	• Prohibit the operation of construction machinery at night to minimize noise disturbances. • Inform communities/residential areas nearby about the timing and nature of construction activities as part of the Stakeholder Engagement Plan (SEP). • Ensure that machinery and equipment used during land preparation and	Gürsu Municipality Supervision Consultant Contractor

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
			construction are distributed evenly throughout the site rather than concentrated in one location. • Choose construction machinery and equipment with low noise emissions to minimize noise impact on the surrounding area. • Use noise barriers or enclosures for loud equipment. • Conduct regular and periodic maintenance of construction machinery and equipment, including daily checks before each shift, to ensure optimal performance and reduce noise levels. • Ensure all vehicles used for transportation comply with the speed limits to minimize noise and enhance safety. • Establish a grievance mechanism to receive and address complaints related to noise and other nuisances from the community. • Halt construction activities in response to grievances until appropriate preventive measures are implemented to address the issues raised. • In case of any environmental noise complaints, measurements will be conducted by accredited laboratory to determine the environmental noise level caused by construction work and if it is over the limits, additional measures such as barriers, arrangement of working hours, etc. will be taken.	

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
18.	Hazardous Substances Management	Construction workforce Communities Flora and fauna Soil and water resources	• Maintain a comprehensive record of the types, quantities, and properties of hazardous materials to be stored on-site. • Establish a designated storage area specifically equipped for the safe storage of hazardous and toxic materials. • Ensure all storage containers are clearly labelled with appropriate hazard warnings, safety information, and emergency contact details to facilitate proper handling and identification. All chemicals will be managed in accordance with their Safety Data Sheets (SDS). • Utilize suitable containers, tanks, and bunding systems to contain hazardous materials and prevent spills, leaks, or releases. Implement secondary containment measures, such as berms, dikes, or containment basins, to capture any accidental releases. • Ensure adequate ventilation and venting systems are in place within storage areas to prevent the accumulation of hazardous vapours or gases. • Identify and safely remove hazardous materials, including lead-containing components from solar panels and electronic waste from inverters, following proper disposal protocols. • Implement appropriate containment and handling procedures to minimize the risk of spills or releases of hazardous substances during storage and handling. • Arrange for the proper disposal or recycling of hazardous materials through licensed facilities to ensure safe and compliant waste management.	Gürsu Municipality Supervision Consultant Contractor

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
Community Health and Safety				
19.	Increased traffic	Communities	• Coordinate traffic management to regulate construction vehicle movement. • Schedule construction activities during off-peak hours to minimize traffic congestion. • Ensure coordination and develop infrastructure upgrades or expansions in advance of the sub-project, including improvements to roads, utilities, and telecommunications if necessary. • Use flagmen and signage to direct traffic safely around construction area. • Provide regular updates to the community about construction schedules and traffic impacts. • Ensure all construction vehicles comply with speed limits specified in the regulations and are maintained to minimize emissions and noise. • Limit vehicle speed on unpaved roads to 30 km/h. • Conduct safety training for construction workers on road safety protocols and provide road safety training for all drivers. • Use safe traffic control measures, including road warning signs, speed bumps, and flag persons as necessary. • Monitor traffic conditions and adjust operations as necessary to ensure safety. • Repair any damage to the roads promptly. • Establish a grievance mechanism for community members to report traffic concerns. • Prepare an emergency response plan and protocols to address potential infrastructure failures, accidents, or natural disasters during construction. • Place warning signs, speed bumps and signaling systems on roads passing in front of the school. • Restrict construction site vehicles from passing through the area during school entrance and exit hours or determine alternative routes. • Before construction work that may cause temporary disturbance, the public and nearby institutions and organizations, hospitals and schools will be informed. • Assign direction officers to ensure safe passage of service vehicles and pedestrians.	Gürsu Municipality Supervision Consultant Contractor
20.	Risks related with Gender Based Violence (GBV) Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	Communities	• Deliver ethical rules and public communication training to all employees to prevent gender-based violence (GBV), harassment, and abuse in the workplace. • Require all workers to sign and adhere to a code of conduct that promotes respectful behaviour. • Conduct regular awareness-raising sessions on-site focused on GBV prevention and other relevant social issues. • Establish a grievance mechanism to receive and address complaints related to	Gürsu Municipality Supervision Consultant Contractor

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
			GBV and workplace misconduct. • Women's complaints of sexual abuse will be handled in a confidential manner and women staff (e.g. Women Social Workers) will be employed within the grievance mechanism to ensure that these complaints are shared.	
21.	Local Economy, Livelihood Sources and Employment	Communities	• Prioritize local hiring for unskilled, semi-skilled, and skilled positions within the scope of the sub-project. • Regularly engage with local communities and maintain a grievance mechanism to address community concerns and feedback.	Gürsu Municipality Supervision Consultant Contractor
22.	Impacts on Vulnerable and Disadvantaged Individuals and Groups	Communities	• Develop a recruitment policy that includes non-discriminatory hiring practices, tailored training programs for vulnerable groups, and support services such as transportation and childcare to facilitate workforce participation.	Gürsu Municipality Supervision Consultant Contractor
Biodiversity Conservation and Sustainable Management of Living Natural Resources				
23.	Disturbance on Biodiversity	Flora and fauna	• The exact starting date of the construction has not yet been finalized. However, construction activities will be scheduled to avoid critical periods for local biodiversity, including nesting seasons for birds and hibernation periods for mammals. To minimize potential impacts, the following mitigation measures will be implemented: • Prior to construction, biodiversity surveys will be conducted to determine appropriate timing. • Engage qualified biodiversity experts to conduct **pre-construction surveys** to identify presence and distribution of flora and fauna on the subproject site, if any, with a focus on impact on habitats such as nesting or burrowing sites, to avoid disturbance or destruction during construction activities. • Implement a gradual construction approach to allow fauna species time to escape or provide for their relocation to suitable habitats. • Schedule construction activities during periods of low wildlife activity, avoiding nesting seasons for birds and hibernation periods for mammals. • Minimize vegetation removal by conducting thorough surveys to avoid unnecessary clearing. • Restore natural vegetation upon completion of construction activities to enable species to re-inhabit surrounding areas. • Install exclusion fencing to prevent animals from entering construction zones, using wildlife-friendly designs that allow small animals to pass through safely. • Install barriers around known burrows or nesting sites to protect them from disruption during construction, using temporary or permanent solutions as necessary. • Clearly separate subproject construction sites and access roads from other areas with appropriate signage and fencing, limiting personnel and vehicle access to these areas.	Gürsu Municipality Supervision Consultant Contractor

No.	Risks and Impacts	Receptor(s)	Proposed Mitigation Measure	Responsible Parties
			• Reduce habitat degradation by keeping vehicles on designated access roads and minimizing pedestrian traffic in intact areas. • It is estimated that approximately 14,000 m² of vegetation will be cleared. Where applicable, topsoil to a depth of 10 cm will be stripped and stored for reuse during site restoration, corresponding to an estimated volume of 1,400 m³	
Cultural Heritage				
24.	Impacts on Cultural Heritage	Cultural heritage	• Develop and implement the Chance Finds Procedure (see Appendix-10. Chance Find Procedure) to ensure timely identification and appropriate management of any chance findings during sub-project implementation. • Include the Chance Finds Procedure as part of toolbox training sessions during construction to raise awareness among workers. • Stop construction work immediately if any chance finds are encountered. • Inform the relevant Preservation Board or Museum Directorate and ILBANK immediately, and ensure the security of the area by the contractor. Construction work will not resume until official notification is received.	Gürsu Municipality Supervision Consultant Contractor
Stakeholder Engagement and Information Disclosure				
25.	Insufficient Stakeholder Engagement Activities and Public Consultation.	Communities Construction workforce	• Create channels for interaction and communication with local communities, ensuring that engagement activities are scheduled at convenient times. • Conduct regular consultations with relevant authorities and local communities to discuss project management and gather feedback. • All channels of reaching out to the local people will be used to increase participation. Bulk SMS, WhatsApp messages, social media channels, posters and brochures will be prepared and delivered to the local people, especially the brochures will be hung in mukhtar office, mosques, tea houses and coffee houses. In addition, a section will be created for the sub-project on the Gürsu Municipality website. All information about the sub-project will be shared here. The support they need will be provided to vulnerable and disadvantaged groups who may have difficulty in participation. • ESMP Checklist, SEP and other relevant subproject documents and information will be disclosed to subproject employees including contractors, subproject stakeholders which are defined in the SEP and the public. • Establishment and proper functioning of a grievance mechanism will be ensured and information about it disseminated to the public. • It will be ensured that the concerns of all stakeholders are addressed. • An adequate communication framework will be established to ensure that vulnerable groups' voices are heard, pending issues are resolved and grievances heard.	Gürsu Municipality Supervision Consultant Contractor

3.b) Operation ESMP Matrix

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure
Labor and Working Conditions				
1.	Improper Working Conditions	Employees	• Conduct daily/weekly toolbox talks covering the OHS Plan and labor conditions. • Apply the SLMP to ensure compliance in recruiting and managing all employees. • Enforce strict prohibition of child labor, forced labor, and unregistered labor as per SLMP requirements. • Provide employees with clear, documented information on their labor rights, including working hours, wages, overtime, compensation, and benefits at the start of employment and whenever material changes occur. • Implement and maintain an accessible Grievance Mechanism for workers. Inform all workers at recruitment. • Recruitment procedures will comply with national labor legislation and ESS2, and an accessible grievance mechanism for workers will be implemented and maintained. • For non-routine work, a risk assessment must be made before the job. A work permit procedure must be implemented.	Gürsu Municipality
2.	General OHS risks	Employees	• Develop a comprehensive **risk assessment document** for sub-project, addressing specific risks and defining mitigation measures and work permit procedure must be applied. • Ensure that all employees, including subcontractors, receive necessary OHS training covering identified risks. • Prepare sub-project management plans, including Safe Work Procedures and an **Emergency Response Plan**. • Emergency scenarios should be determined for all possible risks and every employee should receive training on these scenarios. • Enforce safety procedures and provide appropriate PPE to all employees. • Incorporate job-specific safety procedures and requirements in OHS training programs.	Gürsu Municipality
3.	Physical Hazards: Lifting Operations OHS Risks	Employees	• Ensure that lifting area will be enclosed with fence to prevent access to the lifting area during lifting work. • Ensure that warning signs will be installed for lifting activities • Ensure that safety procedures will be used for lifting operations. • Ensure that lifting work will be carried out by well trained, qualified, and	Gürsu Municipality

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure
			certified lifting team and with proper communication means and flag man. • Ensure that workers will be provided with all necessary PPE and safety materials. • Ensure all equipment used for lifting operations including slings, chains and hooks are checked technically and records are kept according to local safety legislation.	
4.	Physical Hazards: Electrical Hazards	Employees	• No one without a valid certification on vocational training on electricity will be allowed to work on electrical installations. • Ensure that all energized electrical devices and lines are marked with warning signs; • Ensure that the devices are locked (de-charging and leaving open with a controlled locking device) and labeled (warning sign placed on the lock) during service or maintenance; • A “Lockout Tagout” (LOTO) Procedure specific to the subproject should be prepared, personnel should be trained and its implementation should be supervised. • Ensure that all electrical cords, cables, and hand power tools are checked for frayed or exposed cords. Also, ensure that the manufacturer's recommendations for the maximum permitted operating voltage of portable hand tools are followed; • Damaged electrical cables should be replaced with new ones, and no taping or splicing should be done. • Insulating mats should be placed under electrical panels, including portable panels. • Ensure that portable electrical appliances are “portable electrical appliance tested (PAT)” • Ensure that all electrical equipment used in environments that are or may be wet is double insulated/grounded; use equipment with ground fault interrupter (GFI) protected circuits; • All panels will be equipped with a residual current relay. • Ensure that power cords and extension cords are protected against damage from traffic by shielding or suspending above traffic areas; • Ensure that high-voltage equipment ('electrical hazard') and service rooms where access is controlled or prohibited are properly labeled; • Ensure that "No Approach" zones are established around or under high voltage lines; • Ensure that construction vehicles or other vehicles with rubber tires that come into direct contact with or arc across high-voltage cables are taken out of service for 48 hours; • Ensure that all buried electrical cables are thoroughly identified and	Gürsu Municipality

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure
			marked prior to any excavation work. • Ensure that special training programs are organized for employees on electrical hazards and safety precautions. • Ensure that rapid response teams and emergency plans are established for electrical accidents. • Ensure that regular electrical safety inspections are conducted in the project area. • Ensure that periodic inspections are conducted to ensure that employees use appropriate personal protective equipment (PPE).	
5.	Fire Safety Prevention Measures and Emergency Response	Employees Flora and fauna Soil, water resources	• Ensure all employees are trained for their responsibility to report dangers and firefighting measures • Ensure that all flammable and hazardous materials are stored in designated, secure areas away from ignition sources. • Ensure firefighting systems and equipment are available. • Ensure fire and emergency drills are conducted regularly. • Designate trained fire wardens for each area to lead evacuations and coordinate with emergency responders. • Keep an up-to-date list of emergency contacts, including local fire departments and hospitals, for quick access in case of fire. • Make sure that there are enough first aiders in the first aid regulations for the workplace hazard class.	Gürsu Municipality
6.	Physical Hazards: Ergonomics, Repetitive Motion, Manual Handling Lifting	Employees	• Establish clear weight limits for manual handling tasks and label heavy loads accordingly; • Ensure that mechanical assists are used to eliminate or reduce the effort required to lift materials, hold tools and work objects, and that more than one person is lifting if weights exceed thresholds; • Ensure that tools are selected and designed that reduce force requirements and holding times and improve postures; • Ensure that user-adjustable workstations are provided; • Ensure that rest and stretch breaks are incorporated into work processes and job rotation is in place; • Ensure quality control and maintenance programs are in place that reduce unnecessary forces and effort; • Ensure that additional special circumstances, such as left-handed people, are considered. • Ergonomics training should be given to personnel at regular intervals.	Gürsu Municipality
7.	Physical Hazards: Chemical Hazards	Employees Flora and fauna Soil, water resources	• Ensure that the hazardous substance is replaced with a less hazardous substitute; • Ensure that engineering and administrative control measures are in place	Gürsu Municipality

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure
			to prevent or minimize the release of hazardous substances into the working environment, keeping the exposure level below internationally established or recognized limits; • Ensure that the number of workers exposed or likely to be exposed is minimal; • Ensure that chemical hazards are communicated to workers through labeling and marking according to nationally and internationally recognized requirements and standards, including International Chemical Safety Cards (ICSC), Safety Data Sheet or equivalent. Any means of written communication should be in an easily understood language and be readily available to exposed workers and first-aid personnel; • Ensure that employees are trained in the use of available information (such as Safety Data Sheet), safe working practices and proper use of PPE. • Ensure workers have access to suitable personal protective equipment (PPE), such as gloves, respirators, goggles, and protective clothing, based on the specific chemical hazards. • Store hazardous substances in designated areas with appropriate ventilation, labeling, and secure containment to prevent accidental exposure or spills. • Provide chemical overflow pallets and store chemical containers by placing them on them. • Develop and implement a spill response plan, as part of the Emergency Response Plan, including containment measures, chemical spill/leak response drills, cleanup procedures, hazardous substance disposal, and emergency contact information. • Dispose of chemical waste according to regulations to prevent environmental contamination and worker exposure. • Regularly inspect and maintain chemical handling equipment, storage areas, and PPE to prevent leaks or accidental releases.	
8.	Gender-Based Violence (GBV); Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) on Employees; Gender Inequality	Employees	• Provide GBV and SEA/SH awareness sessions for the management teams of the construction contractor and consultants to promote understanding and accountability. • Conduct regular awareness meetings with workers to educate them on GBV and SEA/SH issues and the importance of respectful workplace conduct. • Ensure all workers receive training on recognizing, preventing, and responding to GBV and SEA/SH incidents. • Require all workers to review, sign, and adhere to a Code of Conduct that	Gürsu Municipality

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure
			explicitly addresses unacceptable behaviors related to GBV and SEA/SH. • Implement a confidential and accessible grievance mechanism specifically designed to capture and address GBV and SEA/SH-related complaints in a timely manner.	
Resource Efficiency and Pollution Prevention and Management				
9.	Waste Management	Employees Communities Flora and fauna Soil, water resources	• Separate waste at the source into waste categories determined in Waste Management Regulation, establish temporary waste storage area • Place labeled bins for each type of waste at strategic locations on-site to ensure correct disposal by workers. • Implement practices to reduce waste generation by optimizing material use and reusing materials where possible. • Contract with local recycling facilities to ensure that recyclable materials (e.g., metals, paper, plastic) are properly processed. • Store waste in designated, secured areas to prevent littering, leaching, and environmental contamination. • Use leak-proof containers for hazardous or liquid waste and ensure they are adequately labeled. • Contract with licensed waste disposal companies to handle non-recyclable and hazardous wastes in accordance with Waste Management Regulation. • Track and document the disposal process to ensure compliance and accountability. • Conduct regular awareness sessions and training for workers on waste reduction techniques, proper disposal practices, and the importance of waste management. • Regularly monitor waste management practices, conduct site inspections, and assess waste volumes to identify areas for improvement. • Establish a reporting system to document waste types, quantities, and disposal methods. • Develop a comprehensive waste management plan that includes waste reduction targets, disposal methods, monitoring schedules, and assigned responsibilities for effective waste management throughout the project. • Use containment systems for waste that poses spill risks, and keep spill kits accessible. Train staff on immediate spill response actions to prevent soil and water contamination. • Conduct maintenance tasks, such as oil changes and battery replacements, off-site;	Gürsu Municipality
10.	Electronic Waste Disposal	Employees Communities	• Contract with recycling facilities and/or manufacturers to ensure proper	Gürsu Municipality

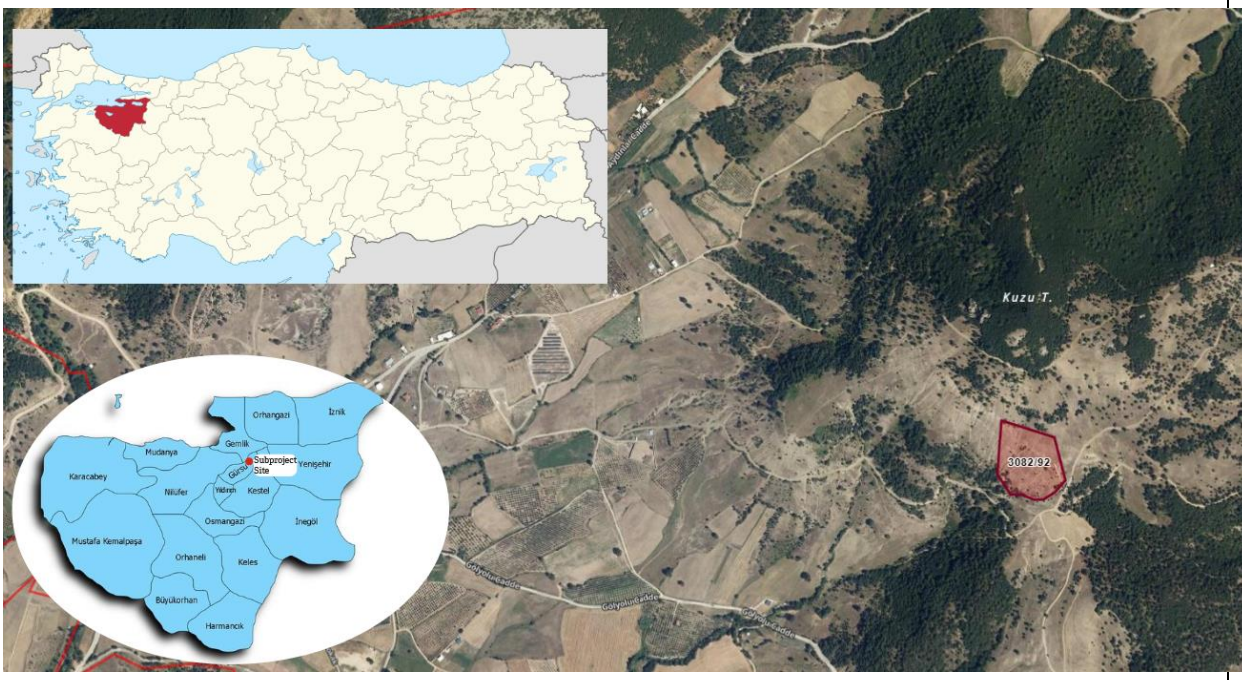
Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure
		Flora and fauna Soil, water resources	disposal or recycling of obsolete equipment; • Agreements will be set with e-waste recycling facilities to ensure responsible disposal of electronic waste from solar panels, inverters, batteries, etc.	
11.	Water Use	Flora and fauna Soil, water resources	• Use water efficiently when cleaning solar panels to minimize water consumption and wastewater production. • Implement wiper cleaning using rubber blade water sprayers that require minimal water, promoting water conservation practices.	Gürsu Municipality
12.	Wastewater Management	Flora and fauna Soil, water resources	• Utilize septic tanks constructed during the construction stage to collect wastewater from operational staff. • Ensure septic tanks are regularly vacuumed to prevent overflow, reduce contamination risk, and maintain system functionality.	Gürsu Municipality
13.	Soil and Groundwater Contamination	Employees Communities Flora and fauna Soil and water resources	• Contain and clean up any oil, chemical, lubricant, or fuel spill immediately to prevent environmental contamination. • Implement spill prevention and response measures. Maintain spill containment and clean-up kits on-site. Ensure all spills are contained, cleaned, and disposed of by licensed waste management companies. • Conduct routine servicing of construction vehicles and equipment at designated off-site locations to minimize the risk of leaks or spills. • Collect and store waste oil securely for recycling or dispose of it through licensed waste vendors to ensure safe handling. • Provide adequate sanitary facilities, including toilets and showers, for the construction workforce. Ensure prompt repairs and maintenance in the event of any leaks or spills to maintain hygiene and safety standards.	Gürsu Municipality
14.	Hazardous Substances Management	Employees Communities Flora and fauna Soil and water resources	• Maintain a comprehensive record of the types, quantities, and properties of hazardous materials to be stored on-site. • Establish a designated storage area specifically equipped for the safe storage of hazardous and toxic materials. • Ensure all storage containers are clearly labelled with appropriate hazard warnings, safety information, and emergency contact details to facilitate proper handling and identification. All chemicals will be managed in accordance with their Material Safety Data Sheets (MSDS). • Utilize suitable containers, tanks, and bunding systems to contain hazardous materials and prevent spills, leaks, or releases. Implement secondary containment measures, such as berms, dikes, or containment basins, to capture any accidental releases. • Ensure adequate ventilation and venting systems are in place within storage areas to prevent the accumulation of hazardous vapours or	Gürsu Municipality

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure
			gases. • Identify and safely remove hazardous materials, including lead-containing components from solar panels and electronic waste from inverters, following proper disposal protocols. • Implement appropriate containment and handling procedures to minimize the risk of spills or releases of hazardous substances during storage and handling. • Arrange for the proper disposal or recycling of hazardous materials through licensed facilities to ensure safe and compliant waste management.	
Community Health and Safety				
15.	Risk of accidents and injury (e.g. Electric Shock) involving community members (inc. Children)	Communities	• Sub project area must be fenced and access of the community members (especially children) must be physically restricted by any means. • Security surveillance of the area must be maintained 7/24	Gürsu Municipality
16.	Glare from Solar Panels which can be a Safety Hazard for Drivers, Pedestrians, and Nearby Residents, particularly if it Impairs Visibility or Causes Discomfort	Communities	• Ensure correct orientation of solar panels to minimize glare and reduce potential impact on road safety near the solar plant. • Apply anti-glare coatings to panels where required to further mitigate glare and enhance road safety in the vicinity.	Gürsu Municipality
17.	Risks Related with Gender Based Violence (GBV) Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	Communities	• Deliver ethical rules and public communication training to all employees to prevent gender-based violence (GBV), harassment, and abuse in the workplace. • Require all workers to sign and adhere to a code of conduct that promotes respectful behavior. • Conduct regular awareness-raising sessions on-site focused on GBV prevention and other relevant social issues. • Establish a grievance mechanism to receive and address complaints related to GBV and workplace misconduct.	Gürsu Municipality
18.	Impacts on Local Economy, Livelihood Sources and Employment	Communities	• Regularly engage with local communities and maintain a grievance mechanism to address community concerns and feedback.	Gürsu Municipality

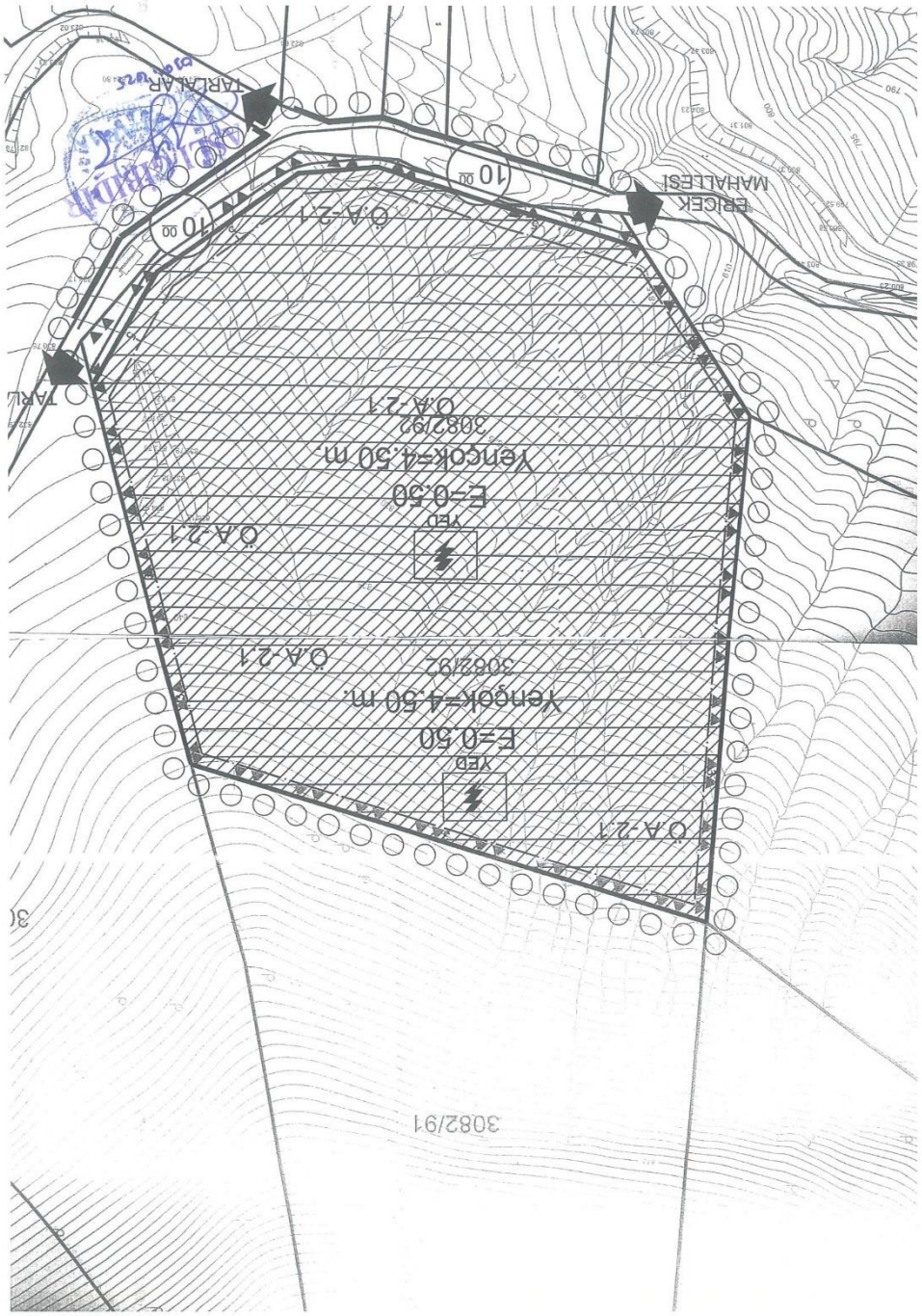
Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure
19.	Impacts on Vulnerable and Disadvantaged Individuals and Groups	Communities	• Implement a recruitment policy that promotes non-discriminatory hiring, provides tailored training for vulnerable groups, and offers support services such as transportation or childcare.	Gürsu Municipality
20.	Security Personnel	Communities	• Security personnel will be present on site at all times. The sub-borrower will ensure that the security personnel are not involved in past abuses and have received adequate training. Security personnel will not carry weapons. Force will only be sanctioned in preventive or defensive circumstances proportionate to the threat and security will operate in accordance with the law. In addition, the solar power plant site will be closed with wire mesh. Entry and exit to the power plant area will only be through the security gate. The area surroundings and roads will be illuminated. The site will be monitored 24/7 by a camera system. • The grievance mechanism will allow communities and workers to express concerns regarding security issues and behavior of security personnel.	Gürsu Municipality
Biodiversity Conservation and Sustainable Management of Living Natural Resources				
21.	Disturbance on Biodiversity	Flora and fauna	• Ensure proper maintenance of exclusion fencing around the site, utilizing wildlife-friendly designs that allow small animals, such as hedgehogs, to pass safely. • Implement appropriate signage and fencing to separate project access roads from other areas, limiting personnel and vehicle access to designated zones. • Since the subproject area is located on bird migration routes, ensure that the following precautions are taken. • Choose the lighting in and around the facility with sensors and low power as much as possible. • If an increase in bird deaths is observed in the subproject area, ensure that visual deterrents (movable flags, rotating reflectors) are placed.	Gürsu Municipality
Stakeholder Engagement and Information Disclosure				
22.	Insufficient Stakeholder Engagement Activities and Public Consultation.	Communities	• Create channels for interaction and communication with local communities, ensuring that engagement activities are scheduled at convenient times. • Conduct regular consultations with relevant authorities and local communities to discuss subproject management and gather feedback.	Gürsu Municipality

Appendices

Appendix-1. Site Map



Appendix-2. Zoning Plan



GÖSTERİM

ÖLÇEK 1/1000

PLAN ONAMA SINIRI

MÜLKİYET SINIRI

YAPI YAKLAŞMA SINIRI

YED — YENİLENEBİLİR ENERJİ KAYNAKLARINA DAYALI ÜRETİM TESİS ALANI (GES)

10 00 — TAŞIT YOLU

Ö.A -2.1 — ÖNLEMLİ ALAN 2.1 (ÖNLEM ALINABİLECEK NİTELİKTE STABİLİTE SORUNLU ALANLAR)

PLAN NOTLARI:

1. PLAN, PLAN AÇIKLAMA RAPORU, PLAN HÜKÜMLERİ VE VAZİYET PLANI İLE BERABER BİR BÜTÜNDÜR.

2. APLİKASYONDA KADASTRAL SINIRLAR ESASTIR.

3. PLAN EKİNDE ONAYLANAN VAZİYET PLANINA GÖRE UYGULAMA YAPILACAKTIR.

4. PLANLAMA ALANINDA "YENİLENEBİLİR ENERJİ KAYNAKLARINA DAYALI ÜRETİM TESİSİ (GES)" YER ALACAKTIR.

5. ENERJİ ÜRETİM ALANINDA; GÜNEŞ PANELLERİ, TRAFO YAPILARI, İDARİ TESİS VE İLGİLİ MÜŞTEMİLATLAR GİBİ ZORUNLU YAPILAR YER ALABİLİR.

6. GÜNEŞ PANELLERİ, TRAFO YAPILARI, İDARİ TESİS VE İLGİLİ MÜŞTEMİLATLAR TOPLAMI EMSAL= 0,50 YENÇOK 4,50 metre OLACAKTIR.

7. PLAN ÜZERİNDE GÖSTERİLEN YAPI YAKLAŞMA MESAFELERİNE UYULACAKTIR.

8. TOPLAM EMSAL DEĞERİ İÇİNDE YER ALAN GÜNEŞ PANELLERİ BAŞKA AMAÇLA KULLANILAMAZ VE PLAN DEĞİŞİKLİĞİ YOLUYLA FARKLI BİR KULLANIM KARARI GETİRİLEMEZ.

9. PLANDAKİ YOL VB. KAMUSAL ALANLAR TERK EDİLEREK KAMU ELİNE GEÇMEDEN YAPI RUHSATI VERİLEMEZ.

10. PLANLAMA ALANINA HİZMET EDECEK TEKNİK ALTYAPI HİZMETLERİNE (YOL, KALDIRIM, İÇME SUYU, YAĞMUR SUYU, PİS SU, KANALİZASYON, ENERJİ VE DOĞALGAZ İLETİM HATLARI VB.) İLİŞKİN TÜM ALTYAPI VE ÜST YAPI MALİKLER TARAFINDAN YAPILACAKTIR.

11. YAPILARDA ÇATI KATI VE ÇEKME KATI YAPILAMAZ.

12. ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ İL MÜDÜRLÜĞÜ TARAFINDAN 29.7.2024 TARİHİNDE ONAYLANAN İMAR PLANINA ESAS JEOLOJİK VE JEOTEKNİK ETÜT RAPORU'NUN SONUÇ VE ÖNERİLER BÖLÜMÜNDE BELİRTİLEN AŞAĞIDA MADDELENDİRİLEN ŞARTLARA UYULACAKTIR.

- Eğimin yüksek olduğu kesimlerde, yapılaşmayı olumsuz etkileyebilecek yamaç duraysızlıkları yapılacak kazılar ve planlanan yapı yükleri ve inceleme alanını etkileyen dış yüklerde hesap edilerek projeye esas olan zemin etüt çalışmalarında şev stabilize analizleri yapılarda ayrıntılı olarak incelenmeli ve stabiliteyi sağlayacak mühendislik önlemleri belirlenmeli ve uygulanmalıdır. bu çalışmalar doğrultusunda kazı güvenliği için gerekli önlemler alındıktan sonra kazıya başlanmalı ve kontrolsüz kazı yapılmamalıdır.

- Parselde Stabilite sorununa neden olacak ve yapı temellerini olumsuz etkileyecek yüzey ve yeraltı ve sızıntı sularının uzaklaştırılmasına yönelik uygun drenaj sistemleri yapılmalıdır. Mevsimsel koşullara ve yağış rejimine bağlı olarak bölgede yerüstü sularına bağlı olumsuzlukların meydana gelmemesi açısından temel ve yüzey drenajları yapılarak temel altına su sızdırması önlenmelidir.

- Yapılacak parsel bazlı zemin etütlerinde temel tipi, temel derinliği ile yapı yüklerinin taşıttırılacağı seviyelerin mühendislik parametreleri ve Stabilite durumu yapı tasarımına esas parsel bazlı zemin etütleri ile ayrıntılı olarak incelenmeli, alınacak mühendislik önlemleri belirlenmelidir. Yapılaşmaya bağlı zemin deformasyonlarına yönelik gerekli zemin iyileştirmeleri yapılmalıdır ve uygulandıktan sonra yapılaşmaya gidilmelidir.

- Tüm birimler içerisinde yanal ve düşey yönde heterojen bir yapıya gösterebileceğinden yapı temellerinin aynı karakterdeki jeolojik seviye içinde kalması sağlanmalı, yapı-zemin etkileşimine uygun temel sistemi geliştirilmelidir. Yapılaşmaya bağlı zemin deformasyonlarına yönelik gerekli zemin iyileştirmeleri

ASLI GİBİDİR

İmar Dair Bilgi

T.C.
BURSA BÜYÜKŞEHİR BELEDİYESİ
MECLİS KARARI

Karar No : 936

Özeti: Gürsu Belediyesine ait 1/1000 ölçekli Uygulama İmar Planı değişiklikleri

Büyükşehir Belediye Meclisinin, 17.09.2024 günü saat 17.00'de yaptığı 2024/2029 seçim döneminin 5., 1. dönemin 5. OLAĞAN toplantısının 2. Birleşimine ait gündemin 4/95. maddesini teşkil eden İmar ve Bayındırlık Komisyonu Raporu okunarak yapılan görüşme sonucunda;

Raporda;

"12.09.2024 tarihinde yapılan Bursa Büyükşehir Belediye Meclisinin, 1. oturumunda 12.09.2024/845 sayılı kararıyla Eylül Meclisinin 2. oturumunda görüşülmek üzere gündeme alınan ve daha önce Bursa Büyükşehir Belediye Meclisinin, 13.06.2024/641 sayılı kararı ile İmar ve Bayındırlık Komisyonuna havale edilen Gürsu Belediye Meclisinin, Meclis Kararlarının komisyonumuzca incelenmesi sonucunda;

Uygun Bulunan Karar:

1) 05.06.2024 tarih ve 86 sayılı Meclis Kararının **uygun olduğuna,**

5216 sayılı Büyükşehir Belediyesi Kanunu'nun 7/b ve 14. maddesine istinaden; oybirliği/oyçokluğu ile karar verilmiştir.

Bu raporda belirtilen imar planı değişikliklerinden 'İmar Planı Değişikliğine Dair Değer Artış Payı Hakkında Yönetmeliği'ne' tabi olanların değer artış payı işlemlerinin tamamlatılmasında ilgili İlçe Belediyesi yetkili ve sorumludur.

Büyükşehir Belediye Meclisine arz olunur." denilmekte olup;

Konunun Mecliste görüşülmesi sonucunda; Gürsu Belediye Meclisinin, 05.06.2024 tarihli ve 86 sayılı Meclis Kararının **uygun olduğuna,**

Bu raporda belirtilen imar planı değişikliklerinden "İmar Planı Değişikliğine Dair Değer Artış Payı Hakkında Yönetmeliği'ne" tabi olanların değer artış payı işlemlerinin tamamlatılmasında ilgili ilçe belediyesi yetkili ve sorumludur.

3194 sayılı İmar Kanunu'nun 8/b ve 5216 sayılı Büyükşehir Belediyesi Kanunu'nun 7/b ve 14. maddeleri uyarınca raporun kabulüne Büyükşehir Belediye Meclisinin, 17.09.2024 günlü OLAĞAN toplantısının 2. birleşiminde yapılan işaretle oylamada mevcudun oybirliği ile karar verilmiştir.

Mustafa BOZBEY
Meclis Başkanı

Armağan ELÇİN
Katip Üye

Ahmet Alperen AYDIN
Katip Üye

20.09.2024

ASLI GİBİDİR
21.01.2025

Appendix-3. EIA Out of Scope Decision

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

Sayı : E-56607814-220.03-9577408 24.05.2024

Konu : ÇED Görüşü

GÜRSU BELEDİYE BAŞKANLIĞINA
(İmar ve Şehircilik Müdürlüğü)

İlgi : 21.05.2024 tarihli ve 80770700-41326 sayılı yazınız.

Bursa İli, Gürsu İlçesi, Ericek Mah. tapunun 3082 ada, 92 nolu parselde, yapılması planlanan, "GES (0.999 M kapasiteli)" projesi işinin (ÇED) Yönetmeliği hükümleri doğrultusunda değerlendirme yapılması ilgi yazınız ile istenilmektedir.

İlgi yazı ve ekindeki başvuru dosyası üzerinde yapılan inceleme neticesinde, söz konusu proje alanının 2 hektarın altında kalması, GES kapasitesinin 1MWe altında kalacağı anlaşılmış olup bahse konu projenin, 29/07/2022 tarih ve 31907 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren, Çevresel Etki Değerlendirmesi Yönetmeliği, "Çevresel Etki Değerlendirmesi Uygulanacak Projeler Listesi (EK-I)" ve "Çevresel Etkileri Ön İnceleme ve Değerlendirmeye Tabi Projeler Listesi (EK-II)" listeleri kapsamı dışında kaldığı belirlenmiştir.

Bilindiği üzere, ÇED Yönetmeliği ile gerçek ve tüzel kişilerin gerçekleştirmeyi planladıkları Yönetmelik kapsamına giren projelerin çevre üzerine yapabilecekleri bütün etkilerin belirlenerek değerlendirilmesi ve tespit edilen olumsuz etkilerin önlenmesi için Çevresel Etki Değerlendirmesi sürecinde uyulacak idari ve teknik usul ve esasların düzenlenmesi amaçlanmakta olup herhangi bir projenin ÇED Yönetmeliği kapsamı dışında bulunması, bu faaliyete yürürlükteki diğer mevzuat hükümlerinin uygulanmayacağı anlamını taşımamaktadır.

Bu itibarla; bahse konu projenin her aşamasında; 2872 sayılı Çevre Kanunu ve bu kanunda değişiklik yapılmasına dair 5491 Sayılı Kanun ve bu Kanuna bağlı olarak çıkartılan/çıkartılacak Yönetmeliklerin ilgili hükümlerine uyulması, Çevre Düzeni Planı ve Plan hükümlerine uyulması, ekolojik dengenin bozulmaması, çevrenin korunmasında gerekli hassasiyetin gösterilmesi, taahhütnamede belirtilen esaslara uyulması, diğer ilgili kurum ve kuruluşlardan mer'i mevzuat dahilinde gerekli ruhsat, onay ve izinlerin alınması, söz konusu faaliyetinizin gerek yatırım gerekse işletme döneminde mevcut durumunda değişiklik yapılması planlandığında yeniden İl Müdürlüğümüz görüşünün alınması gerekmektedir. Bu yazının görüş niteliğinde olduğu ve herhangi bir izin yerine geçmediği hususunda,

Bilgilerinizi ve gereğini arz ederim.

Mehmet Ersan AYTAÇ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürü V.

Appendix-4. Copies of Title Deed(s)

BU BELGE TOPLAM 2 SAYFADAN OLUŞMAKTADIR BİLGİ AMAÇLIDIR.

Tarih: 5-9-2023-16:21

webtapu

Kaydı Oluşturan: ŞENOL TANER KESGİN (Gürsu Belediye Başkanlığı)

Tapu Kaydı (Aktif Malikler için Detaylı - ŞBİ var)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz	Ada/Parsel:	3082/92
Taşınmaz Kimlik No:	119558196	AT Yüzölçüm(m2):	18523.74
İl/İlçe:	BURSA/GÜRSU	Bağımsız Bölüm Nitelik:	
Kurum Adı:	Gürsu	Bağımsız Bölüm Brüt YüzÖlçümü:	
Mahalle/Köy Adı:	ERİCEKKÖYÜ Mah.	Bağımsız Bölüm Net YüzÖlçümü:	
Mevkii:	Kocaçayır	Blok/Kat/Giriş/BBNo:	
Cilt/Sayfa No:	3/217	Arsa Pay/Payda:	
Kayıt Durum:	Aktif	Ana Taşınmaz Nitelik:	Tarla

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
639785898	(SN:2860446) GÜRSU BELEDİYESİ VKN:4490003721	-	1/1	18523.74	18523.74	3402 S.Y.nın 22/A Md. Gereğince Yenilemenin Tescili 03-02-2022	-

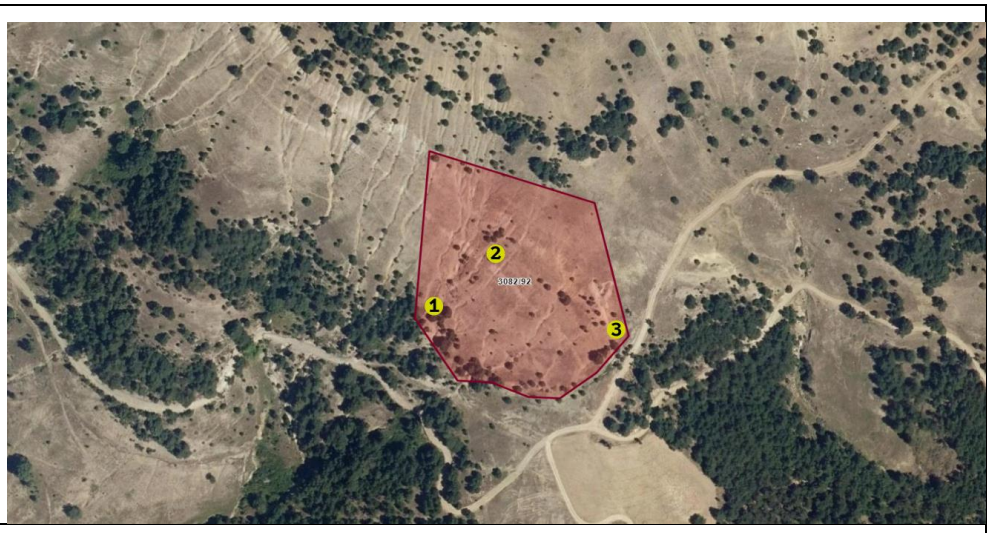
1 / 2

						998	

Bu belgeyi akıllı telefonunuzdan karekod tarama programları ile aşağıdaki barkodu taratarak;

veya Web Tapu anasayfasından (**https://webtapu.tkgm.gov.tr** adresinden) **a3YofhtUx4Q** kodunu Online İşlemler alanına yazarak doğrulayabilirsiniz.

Appendix-5. Photographic Log

Photo No: 00	
Date: **02.05.2025**	
Location: Genel View	
Details/Notes:	
Photo No: 01	
Date: **02.05.2025**	
Location: 1	
Details/Notes: Photo taken from location number 1 in the northeast direction. There are Scots pine and oak trees.	
Photo No: 03	

Date: **02.05.2025**	
Location: 2	
Details/Notes: Photo taken from location number 2 in the northeast direction. There are Scots pine and oak trees.	
Photo No: 04	
Date: **02.05.2025**	
Location: 3	

Details/Notes: Photo taken from location number 3 in the northwest direction. There are Scots pine and oak trees.	

Appendix-6. Construction Notice Template

“Çevreye verdiğimiz rahatsızlıktan dolayı özür dileriz!”

GÜRSU BELEDİYESİ
GES ALTPROJESİ YAPIM İŞİ
İşin Süresi:

Şikâyet, istek, soru ve yorumlarınız için:

YÜKLENİCİ ADI	**:**	**Adres:** **Telefon:** **E-posta:** **İletişim Formu:**
İŞVEREN	**:**	**Adres:** Zafer Mahallesi Gürsu Belediyesi Hizmet Binası Gürsu / BURSA **Telefon:** 444 3 616 **E-posta:** info@gursu.bel.tr **İletişim Formu:**
İller Bankası A.Ş. (İLBANK)		**Adres:** İller Bankası A.Ş. Emniyet Mahallesi, Hipodrom Caddesi No:9/21, Yenimahalle/ANKARA **Telefon:** 0 (312) 508 79 79 **E-posta:** bilgiuidb@ilbank.gov.tr **İletişim Formu:** https://www.ilbank.gov.tr/form/bilgiedinmeuluslararasi

Appendix-7. E&S Incident Notification Form

1) Incident Details		
Date of Incident: [Please insert]	**Time of Incident:** [Please insert]	
Location of the Incident:	[Please insert]	
Sub-borrower Name:	[Please insert]	
Date Reported to ILBANK: [Please insert]	**Reported to ILBANK by**: [Please insert]	**Notification Method**: [Please insert]
Date Reported to WB: [*Please indicate*]	**Reported to WB by**: [Please insert]	**Notification Type**: [Please insert]
Contractor Name:	[Please insert]	
Sub-contractor name (please indicate if involved in the incident):	[Please insert]	

2) Type of incident (please check all that apply)	
☐ Fatality ☐ Lost time injury ☐ Child labor ☐ Forced labor	☐ Environmental pollution incident ☐ Disease outbreaks ☐ Acts of violence/protest ☐ Other

3) Description/Narrative of Incident

4) Actions taken to contain the incident
<u>For incidents involving a Contractor:</u> **Name of Contractor:** _____ **Have the works been suspended? Yes ☐ No ☐**

5) What support has been provided to affected people
[*Please briefly describe*]

6) Please provide the supporting documents for the incident, victims and involved persons
(e.g. copies of the social security registration records, victim and witness statements, notification to authorities, legal investigation reports, training records, photographs, etc.)

Appendix-8. Simplified Labor Management Procedure

SLMP_Template.DOCX

Appendix-9. Roles and Responsibilities

Party	Role	Key Responsibilities
Sub-borrower		
Gürsu Municipality	Gürsu Municipality Management	• Hold ultimate responsibility for the E&S performance of the subproject to the satisfaction of the ILBANK, including the performance of subproject contractors throughout the sub-financing agreement life cycle. • Establish Project Implementation Unit (PIU) following the execution of sub-financing agreements to carry out operational and administrative tasks to oversee the implementation of the E&S instruments and monitoring progress; allocate resources for the recruitment of in-house environmental, social and OHS staff under the PIU • Ensure that E&S instruments and procedures required by ILBANK is prepared within the timeframes agreed with ILBANK and allocate adequate financial and human resources – either from the Sub-borrower's own resources or from the Subproject loan and implement. • Cooperate with the ILBANK representatives to discuss and agree on the ESAP and other E&S covenants for incorporation into sub-financing agreements to be executed between the ILBANK and the sub-borrower (with support from RD E&S team as necessary) • Ensure that EHSS requirements of ILBANK are incorporated into relevant contractor tender and agreement documents to be prepared in collaboration with the construction supervision consultant • Hold and use the authority and responsibility to stop any subproject related work activity if it poses an imminent danger to health, safety, or the environment. • Allocate resource to ensure monitoring of subproject E&S performance and reporting to ILBANK at IFI standards in line with the sub-financing agreement conditions • Facilitate monitoring visits and audits by ILBANK and their consultants • Notify the ILBANK RD – E&S Teams of any significant E&S incident or accident within maximum 24 hours of the accident/incident; contractually require the supervision consultants and/or contractors to promptly report such incident and accidents (timeframe to be defined by ILBANK) • Prepare and submit a detailed E&S Incident Investigation Form, supplemented by an RCA to be conducted pursuant to GIIPs, to ILBANK within **15 days** of the accident/incident date for significant accidents or incidents (in line with the template presented in the E&S Supervision, Monitoring and Reporting Procedure). The investigation will be supplemented by a Root Cause Analysis (RCA). • Prepare and submit semiannual E&S monitoring reports to ILBANK.
	E&S Team - Environmental staff - Social staff - OHS staff	• Participate in the training to be organized by ILBANK as part of ILBANK ESMS Training Procedure implementation • Ensure that E&S documentation required by ILBANK is prepared by qualified independent specialists and submitted to ILBANK for appraisal and credit. • Provide ILBANK with relevant adequate information to undertake the E&S due diligence in accordance with the ESMS (e.g. duly completed sub-borrower questionnaire and supporting documentation to be requested by ILBANK in accordance with the E&S Screening and Risk Classification and ESDD procedures) • Support the sub-borrower management as required in the review and evaluation of ESAP and other E&S covenants for incorporation into sub-financing agreements to be executed between the ILBANK and the sub-borrower • Ensure compliance of subprojects operations (including contractor activities on site) with national legislation and E&S requirements of the lending WB as included in the sub-financing agreements, ESAP and subproject-specific E&S documentation. • Undertake monitoring of subproject E&S performance and reporting to ILBANK at WB standards in line with the sub-financing agreement conditions • Ensure implementation of corrective actions in case of E&S non-compliances

Party	Role	Key Responsibilities
		in coordination and agreement with ILBANK DG and RD E&S teams over reasonable timeframes • Coordinate the construction supervision consultants, contractors and/or external E&S consultants for collection of the monitoring data and compilation of or providing input to periodic monitoring reports as necessary and appropriate • Allow ILBANK representatives (including individual consultants) to access subproject facilities and records
Construction Supervision Consultants ("*Müsavir*")	Management and E&S staff	Carry out the following tasks on behalf of the sub-borrowers: • Participate in the training sessions to be organized by sub-borrowers in line with the requirements of ILBANK ESMS Training Procedure • Supervise the construction works of contractors on-site, including implementation of subproject-specific E&S requirements by contractors on a daily basis • Ensure sufficient E&S capacity for implementation of E&S requirements as set out in the sub-financing agreements between the sub-borrower and ILBANK • Support the sub-borrowers for the supervision and review of E&S management documentation prepared by construction contractors and submit them to sub-borrowers upon finalization • Review monthly self-monitoring reports prepared by the construction contractors for early identification of E&S issues and/or non-compliances and submit them to municipalities/municipal utilities upon finalization • Prepare and submit regular monthly reports to Sub-borrower on the environmental, social and OHS issues of the Sub-Project during the construction phase • Identify E&S non-compliances on site and enforce construction contractors to undertake corrective actions within defined and agreed timeframes • Support the sub-borrowers (as requested) in the preparation of periodic E&S monitoring reports to be submitted to ILBANK in line with the ILBANK E&S Supervision, Monitoring and Reporting Procedure • Notify the sub-borrower of any significant E&S incident or accident that have taken place in subproject related operations within 24 hours.
Construction Contractor	Management and E&S staff	• Ensure sufficient E&S capacity for implementation of E&S requirements as set out in the construction contracts • Participate in the training sessions to be organized by sub-borrowers in line with the requirements of ILBANK ESMS Training Procedure • Prepare subproject-specific E&S management plans and procedures prior to start of construction works as required by the construction contracts • Comply with the requirements of national legislation and implement the E&S requirements as set out in the sub-financing agreements (executed between ILBANK and the sub-borrowers) and construction contracts • Submit periodic (in frequencies to be set by ESAP) E&S self-monitoring reports to the municipalities/municipal utilities through construction supervision consultants ("*müşavir*") – in line with the format provided by ILBANK. • Fill in monthly occupational health and safety (OHS) forms – reviewed by construction supervision consultants. • Implement corrective actions in case of E&S non-compliances under the supervision of sub-borrower's construction supervision consultant • Promptly notify the sub-borrower of any significant E&S incident or accident that have taken place in subproject related operations (timeframe to be defined by ILBANK no later than 24 hours).

Appendix-10. Chance Find Procedure

Introduction

This document describes the Chance Find Procedure for subproject, outlining the procedures that will be followed in case of chance finds occur during the construction activities associated with the subproject.

Scope

This Chance Find Procedure (CFP) will be implemented for Gürsu Municipality 1.228,77 KWp, 999 KWe sub-project in order to manage any chance finds that may be encountered during the construction activities. The purpose of the CFP document is to:

- outline the applicable legislation and standards relevant to this procedure;
- define roles and responsibilities;
- define project commitments, operational procedures, training requirements and guidance relevant to this procedure; and
- define monitoring and reporting procedures.

Although there are no known archaeological sites or remains within the subproject area, it is considered that there may be a potential to encounter archaeological findings during the construction of the subproject. Activities which have high potential to lead to discover or adversely affect the archeological resources are;

- topsoil stripping
- excavation and earthworks

This CFP is prepared in order to provide information to the contractors and employees regarding the actions to be taken in case of an archaeological chance find discovery.

Legislation and Standards

Legislation and standards that apply to the project comprise the following:

- Word Bank Environmental and Social Standard (ESS) 8: Cultural Heritage
- applicable Turkish laws and national standards
- other commitments to and requirements of Turkish government authorities
- other industry guidelines with which the project has committed to comply

In Turkey, movable and immovable cultural and natural assets are protected and preserved by the Law on Preservation of Cultural and Natural Assets (Law No. 2863) published in the Official Gazette dated 23.07.1983 and numbered 18113. Law 2863 establishes legal protection for the following:

- all natural assets and immovable cultural assets constructed up until the end of the 19th century,
- any immovable cultural asset from after the end of the 19th century, identified by the Ministry of Culture and Tourism as an important asset worthy of preservation,
- all immoveable cultural assets located within archeological sites,
- buildings/areas that have witnessed significant historical events during the National War and the foundation of the Turkish Republic and dwellings that have been used by Mustafa Kemal ATATÜRK, regardless of time and registration.

The Ministry of Culture and Tourism is the responsible body to take decisions for protection of cultural heritage in Turkey at the national level. As part of the Ministry, the High Commission for the Protection of Cultural Assets is responsible for protecting and restoring immovable cultural assets. Implementation of the decisions and regulations issued by the Ministry are undertaken by local administrations. At local level, there are Cultural Assets Protection Regional Boards defined by the Ministry of Culture and Tourism, which are responsible for preservation, registration and classification of cultural heritage within their respective jurisdictions. The relevant Regional Board for the project is the Bursa Cultural Heritage Protection Regional Board Directorate." According to Law 2863, all the

natural and cultural assets qualified for legal preservation are properties of the State. Therefore, regional boards have the power and authority to provide legal protection to the preservation sites and to approve or reject all the activities, which have potential negative impacts on the preservation sites such as construction, demolition and excavation activities.

Roles and Responsibilities

Principal roles and responsibilities for the implementation of this procedure are outlined below.

Role	Responsibilities
Contractor - Project Manager	• Overall responsibility for the development, review, approval and coordination of the numerous activities required to initiate, conduct and complete construction. • Ensure that this procedure is prepared, and updated as required, based on the activities undertaken as part of the project. • Ensure that adequate resources are made available to implement the procedures and guidelines outlined in this procedure.
Contractor - Environmental and Social (E&S) Expert	• Initiation, development, implementation and coordination of the CFP during construction. • Ensure that adequate training is given to all site personnel and sub-contractors, covering the procedures and guidelines outlined in this procedure. Establish appropriate control procedures and conduct audits as necessary. • Consultation with and reporting to relevant government bodies in case of potential archeological chance finds. • Record all confirmed chance finds by filling up the “Chance Find Reporting Form” and maintain copies in a log-book. Ensure that the chance finds log-book is up to date.
Contractor - Site Manager	• Day-to-day implementation of the provisions of the CFP in the field during construction. • Notify the E&S Expert regarding potential chance finds during construction.
Employees	• Understand and comply with archeological chance finds procedures and guidelines outlined in this procedure. • Reporting of the potential chance finds to the Site Manager.

Impact Avoidance and Mitigation

In the event of an archaeological discovery, the following actions will be implemented:

- All staff involved in land clearance and excavation activities will take the responsibility for managing archaeological protection and will be trained in these aspects by the E&S Expert.
- In case any potential chance find is encountered, all construction activities will cease immediately in the vicinity of the chance find.
- The Site Manager will be contacted immediately. The discovered site location, the characteristics of the potential archaeological material and photos will be recorded by the Site Manager, who in turn will inform the E&S Expert.
- Bursa Museum Directorate will be notified at the latest within three days after the chance find is encountered. Contact details of the Bursa Museum Directorate are given below:
  Address: Gaziakdemir Mah. Çekirge Cad. No:4/11 Kültürpark içi 16050 Osmangazi/BURSA
  Telephone: (0224) 234 49 18
  E-mail: bursamuzesi@ktb.gov.tr
- The site and its vicinity will be secured 24 hours a day against damage or loss, until inspection by the authority.

- The E&S Expert will fill up a “Chance Find Report Form” for each confirmed chance find and inform the Project Manager about the date that the construction work can resume, which is determined by the authorities concerning the conservation of the heritage.
- Further steps to be followed and proper plan to be implemented for the management of the finds (Changes in the layout, conservation, preservation, restoration and salvage) will be decided and reported in writing by the authorities in charge.
- Photographs of the potential artifacts that are likely to be encountered in the construction site are presented in the following pages to be used during the training of the relevant staff.

Verification and Monitoring

E&S Expert/s will record all cases of archaeological chance finds. He/she will fill up a “Chance Find Reporting Form” for each chance find confirmed by the authority and maintain copies in a logbook. A sample of a reporting form which can be used to record chance finds is included below. The chance find logbook will be summarized on an annual basis and records included in semi-annual monitoring reports to verify that correct management procedures have been followed. Action items will be taken in cases of non-adherence to this CFP.

Reporting

Contractor will comply with reporting requirements including chance finds defined in site-specific ESMP (contractor will develop monthly and quarterly monitoring reports and submit to Gürsu Municipality through supervision consultant; Gürsu Municipality will examine submit the reports to ILBANK quarterly (and monthly if requested by ILBANK); ILBANK will inform the World Bank by providing regular semi-annual monitoring reports.

Gürsu Municipality Subproject Chance Find Reporting Form		
REGISTRATION		
Name of recorder:		
Date and time of discovery:		
Site Name:	**Coordinates** **X**	**Y**
Description of find:		
Photograph:		
Estimated weight and dimensions:		
CONTACT PERSON		
Name/Title/Duty:		
Date and Time:		
Contact information:		
Details of conversation:		
DECISIONS		
Any protection measures to be implemented:		
Movable or immovable: If moved, please specify the new location.		
Further actions required:		
Recommence date and time:		
Notes:		
SUBMISSION		
Name:	**Date:**	

Appendix-11. Change Notification Form

Change Notification Form		
Subproject Name		
Subproject Location		
Subproject Phase	☐	Pre-construction
	☐	Construction
	☐	Operation
Name of the Institution Notifying the Change		
Date		
Category of the Change *(please select all that apply)*	☐	Legislative Change
	☐	Design Change
	☐	Schedule Change due to E&S factors
	☐	Project Schedule Changes due to technical, financial, legal or administrative factors
	☐	Changes due to E&S issues encountered at subproject implementation
	☐	Contractor or Construction Supervision Consultant Change
	☐	Other *(please specify below)*
Detailed Description of the Change(s)		
Documents Submitted with Change Notification Form		
Name of the Staff Notifying the Change		
Position of the Staff Notifying the Change		
Signature		

Appendix-12. Biological Characteristics

Flora

Family/Species	Endemism	IUCN	Bern
Astragalus glycyphyllus	-	LC	-
Quercus cerris	-	LC	-
Crataegus monogyna	-	LC	-
Juniperus oxycedrus	-	LC	-
Laurus nobilis	-	LC	-
Fraxinus ornus	-	LC	-
Tripleurospermum tenuifolium	-	LC	-
Tilia tomentosa	-	LC	-
Pinus brutia	-	LC	-
Pinus nigra	-	LC	-

Source: http://www.tubitak.gov.tr/ (Türkiye Bitkileri Veri Servisi – TUBİTAK) Baytop T., 1994, Türkçe Bitki Adları Sözlüğü, TDK, Ankara http://www.iucnredlist.org/

Fauna

Species	MAK*	IUCN	Bern
Amphibia			
Lepus europaeus	Hunting allowed during specific seasons	LC	ANNEX III
Vulpes vulpes	Hunting allowed	LC	ANNEX III
Buteo buteo	Strictly protected – Hunting prohibited	LC	ANNEX II
Corvus cornix	Hunting allowed during specific seasons	LC	ANNEX III
Lacerta viridis	Strictly protected – Hunting prohibited	LC	ANNEX II

Source: Demirsoy, A., 2003, Türkiye Omurgalıları 'Amfibiler', Çevre Bakanlığı Çevre Koruma Genel Müdürlüğü, Proje No: 90-K-1000-90. Ankara., Baran, İ, 2005, 'Türkiye Amfibi ve Sürüngenleri', Ankara

*__MAK__: Central Hunting Commission of Türkiye

Juniperus oxycedrus

Quercus cerris

	
Crataegus monogyna	*Quercus cerris*

Appendix-13. Emissions and Environmental Noise Calculations

Air Quality/Emission

Air pollution will mainly originate from dust emissions and exhaust emissions as well as Greenhouse Gas (GHG) emissions. Considering the location of the sub-project area, sensitive receptors are not expected to be affected. During the construction phase of the sub-project, the impacts on air quality will mainly originate from dust, exhaust and greenhouse gas emissions:

• Dust emissions during site preparation, excavation, filling and compaction works carried out for construction works.

• Dust emissions from vehicle movements for transporting various construction materials to the project site.

• Exhaust emissions from vehicles used in construction activities.

• Greenhouse gas emissions from small amounts of vehicles and machinery.

Since a limited number of equipment and machinery will be operating on the sites, these air quality impacts will be limited to the area and in the short term.

Calculation of dust emission topsoil stripping

In the calculation of the dust emissions to be generated, the emission factors given in Table 2.7 of the "Regulation on Control of Industrial Air Pollution" (Amended Table: RG-20.12.2014-29211) published in the Official Gazette dated 03.07.2009 and numbered 27277 were used and the results were evaluated within the framework of the same regulation.

The calculations were made using both "uncontrolled" emission factors, considering that the most adverse conditions could occur during dust formation, and "controlled" emission factors, assuming that the necessary control measures were taken.

The area where the SPP project site will be established is 13,986 m^2. In this area, 10 cm topsoil stripping will be used to strip 1,400 m^3 of soil.

(Soil Bulk Density is taken as 1.6 tons/m^3) [3]

1,400 m^3* 1.6 tons/m^3=2,240 tons

Daily working time is planned as 8 hours. Excavation work is planned as 384 hours in total.

2,240 tons/384 hours= 5.83 tons/h

Table 1. Control of Industrial Air Pollution

Sources	Uncontrolled	Controlled	Unit
Extraction	0.025	0.0125	kg/ton
Loading	0.0100	0.005	
Unloading	0.010	0.005	
Transportation (total round trip distance)	0.7	0.35	kg/km-vehicle
Storage	5.8	2.9	Dust/ha-day

[3] https://www.soilquality.org.au/factsheets/bulk-density-measurement

Mass Flow Rate of Dust Emission to Occur During Extraction, Loading and Unloading of topsoil

Uncontrolled; E1 = 5.83 tons/hour x (0.025+0.01+0.01) kg/ton = 0.262 kg/hour

Controlled; E1 = 5.83 tons/hour x (0.0125+0.005+0.005) kg/ton= 0.131 kg/hour

Mass Flow Rate of Dust Emission to Occur During the Transportation of Topsoil

Topsoil taken from the field during construction work will be temporarily stored in the topsoil storage area that will also be located within the work area; this distance is an average of 0.5 km round trip. Assuming that each truck used during transportation can carry 25 tons of material and therefore will make 1 trip in approximately 1 working day (25 tons/23.32 tons/hour), the mass flow rate of dust emissions that will occur during transportation is;

Uncontrolled; E2 = (0.7 kg/km.vehicle) x (0.5 km/1 trip/vehicle) x (1 trip/1 hour) = 0.35 kg/hour

Controlled; E2 = (0.35 kg/km.vehicle) x (0.5 km/1 trip/vehicle) x (1 trip/1 hour) = 0.175 kg/hour

Dust Emission Mass Flow Rate to be Formed During the Storage of Vegetal Soil

Uncontrolled; E3 = (5.8 kg/ha-day)x(1 ha/8 weeks/ 6 days/week/8 hours/day)= 0.0035 kg/hour

Controlled; E3 = (2.9 kg/ha-day)x(1 ha/8 week/6 days/week/8 hours/day)= 0.00185 kg/hour

Accordingly, the total mass flow rate of dust emission to be formed from the stripping operations of the vegetal soil to be carried out;

Uncontrolled; ETOTAL-1 = 0.262 kg/h + 0.35 kg/h + 0.0035 kg/h ≈ 0.62 kg/h

Controlled; ETOTAL-1 = 0.131 kg/h + 0.175 kg/h + 0.00185 kg/h ≈ 0.31 kg/h

Calculation of dust emission Excavation Soil

Within the scope of the sub-project, excavation works will be carried out for 1,800 meters long ETL. The volume of the area to be excavated;

1,800 m * 0.8 m * 1 m = 1,440 m^3

(Soil Volume Weight is taken as 1.6 tons/m^3) [4]

1,440 m^3 * 1.6 tons/m^3 = 2,304 tons

Daily working time is planned as 8 hours. Excavation work is planned as 192 hours in total.

2,304 tons/192 h = 12 tons/h

Mass Flow Rate of Dust Emission to Occur During Removal, Loading and Unloading of Excavation Soil

Uncontrolled; E1 = 12 tons/hour x (0.025+0.01+0.01) kg/ton = 0.54 kg/hour

Controlled; E1 = 12 tons/hour x (0.0125+0.005+0.005) kg/ton= 0.27 kg/hour

Mass Flow Rate of Dust Emission to Occur During the Transportation of Excavation Soil

[4] https://gsim2hwnpbvwtwmb1dg11z6.blob.core.windows.net/media/documents/8866271100_202404051549238_Product%20Information%20Sheet%20%28EU_2021_EP%29tr_TR.pdf

Topsoil taken from the field during construction work will be temporarily stored in the excavation soil storage area that will also be located within the work area; this distance is an average of 0.8 km round trip. Assuming that each truck used during transportation can carry 25 tons of material and therefore will make 1 trip in approximately 1 working day (25 tons/20.98 tons/hour), the mass flow rate of dust emissions that will occur during transportation is;

Uncontrolled; E2 = (0.7 kg/km.vehicle) x (0.8 km/1 trip/vehicle) x (1 trip/1 hour) = 0.88 kg/hour

Controlled; E2 = (0.35 kg/km.vehicle) x (0.8 km/1 trip/vehicle) x (1 trip/1 hour) = 0.44 kg/hour

Dust Emission Mass Flow Rate to be Formed During the Storage of Excavation Soil

Uncontrolled; E3 = (5.8 kg/ha-day)x(1 ha/1 weeks/ 6 days/week/8 hours/day)= 0.12 kg/hour

Controlled; E3 = (2.9/ha-day)x(1 ha/1 week/6 days/week/8 hours/day)= 0.06 kg/hour

Accordingly, the total mass flow rate of dust emission to be formed from the stripping operations of the excavation soil to be carried out;

Uncontrolled; ETOTAL-1 = 0.54 kg/h + 0.88 kg/h + 0.12 kg/h ≈ 1.54 kg/h

Controlled; ETOTAL-1 = 0.27 kg/h + 0.44 kg/h + 0.06 kg/h ≈ 0.77 kg/h

When calculating the dust emission to be generated during the vegetative soil stripping operations, it was taken into account that the works would be carried out under the most adverse conditions. As stated in the “Regulation on Control of Industrial Air Pollution; for newly established facilities, “Calculation of the Contribution Value to Air Pollution” is required if the pollutant mass flow rates are exceeded.

Considering that all the works to be carried out within the scope of the vegetal soil stripping operations to be carried out at the construction site will be carried out in the same time period (worst case scenario), the dust emission to be generated has been calculated as 1.54 kg/hour for the uncontrolled case and 0.77 kg/hour for the controlled case. Therefore, as stated in “Regulation on Control of Industrial Air Pollution”; since the specified pollutant mass flow rates are not exceeded for the topsoil stripping operation, it has not been deemed necessary to calculate the “Contribution Value to Air Pollution” using an internationally accepted distribution model in the facility impact area.

The construction equipment and transportation vehicles in question will be used at different times during the day.

Emission calculation from vehicles

The provisions of the Exhaust Gas Emission Control and Gasoline and Diesel Quality Regulation, which was published in the Official Gazette dated 30.11.2013 and numbered 28837 and entered into force, and the Exhaust Gas Emission Control Regulation, which was published in the Official Gazette dated 11.03.2017 and numbered 30004, shall be complied with.

During construction, the fuel to be spent is only necessary for the work machines to be used, there will be no fuel consumption for heating etc. The usage periods and fuel consumptions of the work machines to be used during the construction phase of the business are shared in Table 2.

Table 2. Usage periods of the work machines to be used in the facility

Machine type	Number	Power (hp/h)	Working Time (h/day)
Crane	1	200	8
Excavator	1	200	8
Truck	1	200	8

Pile Driver	1	90	8
Water Tank	1	120	8

The fuels to be used in the land preparation and construction phase of the sub-project will be diesel fuel to be used during the work of the construction equipment. Apart from this, there is no other type of fuel to be used in the sub-project. Diesel fuel will be preferred as fuel for the construction equipment to be used within the scope of the sub-project. There will be no fuel storage in the sub-project area and the fuel supply to the construction equipment will be made with fuels supplied from authorized stations. The characteristics of diesel fuel are given below:

Table 3. Diesel Properties

Properties	Diesel	Properties	Diesel
Consistency	Very fluid	Carbon Wastes (%)	Trace
Type	Distilled	Sulfur (%)	0.4-0.7
Color	Amber	Oxygen-Nitrogen (%)	0.2
Density (150c-gr/cm^3)	0.8654	Hydrojen (%)	12.7
Viscosity (380 ^{o}C)	2.68	Carbon (%)	86.4
Pour Point (0^{o}C)	-18	Water and Sediment (%)	Trace
Atomization Temperature (0^{o}C)	Atmospheric	Ash (%)	Trace
Pumping Temperature (0^{o}C)	Atmospheric	Heat Value	9.387

Source: Air Pollution Control and Supervision, Chamber of Chemical Engineering, May, 1999

The emission factors table determined by the EPA (Environment Protection Agency) was used for the construction equipment to be used within the scope of the sub-project.

Table 4. Emission Factors Used in Calculations

Power	Year	CO (g/kWh)	HC (g/kWh)	NOx (g/kWh)	PM (g/kWh)
56 ≤ kW < 130 (75 ≤ kW <175)	2012 and above	5,0	0,19	0,40	0,02
130 ≤ kW < 560 (175 ≤ kW <560	2011 and above	3,5	0,19	0,40	0,02

Source: USEPA Standards

Using the data in the table above, exhaust gas emissions that will occur during the construction and operation phases are calculated with the formula below and entered into the tables.

Emission Value (kg/h) = Emission Factor x Engine Power (kW) x Number x kg/1000 gr

Table 5. Emission calculations

Equipment to be used	Piece	Hp	kW	Emission Factor (g/kWh)		Emission Value (kg/sa)
Excavator	1	200	149	CO	3,5	0,52
				HC	0,19	0,03
				NOx	0,4	0,06
				PM	0,02	0,003
Crane	1	200	149	CO	3,5	0,52
				HC	0,19	0,03
				NOx	0,4	0,06
				PM	0,02	0,003
Pile Driver	1	90	67.05	CO	5	0,34
				HC	0,19	0,013
				NOx	0,4	0,026

				PM	0,02	0,0013
Truck	1	200	149	CO	3,5	0,52
				HC	0,19	0,03
				NOx	0,4	0,06
				PM	0,02	0,003
Water Tanker	1	120	89.5	CO	5	0,4475
				HC	0,19	0,017
				NOx	0,4	0,036
				PM	0,02	0,002

1 Hp = 0.745 kW. [5]

When emissions from all vehicles are added together;

Table 6. Amount of Emission

Pollutant	Amount (kg/h)	Working Time (h)	Total Amount (kg/8 h)	24 hour emissions
CO	2.3475	8	18.78 kg	18.78 kg/24 h= 0.7875 kg/h
HC	0.12	8	0.96 kg	0.96 kg/24 h = 0.04 kg/h
NOx	0.242	8	1.936 kg	1.936 kg/24 h = 0.08 kg/h
PM	0.0123	8	0.0984 kg	0.0984kg/24 h = 0,004 kg/h

The calculation was made assuming that all vehicles were operating at maximum operating time and in the same month.

Pollutant	Amount (kg/h)	Mass flow rate (kg/hour) given in Annex-2 Table 2.1 of the "Regulation on Control of Air Pollution from Industrial Sources"	Evaluation
CO	0.7875	50	Below the limit value
HC	0.04	2	Below the limit value
NOx	0.08	4	Below the limit value
PM	0.004	1	Below the limit value

The calculated exhaust gas emission amounts were calculated cumulatively assuming that all machinery and equipment operate at the same time and are entered in the table above. When the calculated hourly mass flow rate (kg/hour) value was compared with the mass flow rate (kg/hour) values given in Annex-2 Table 2.1 of the "Regulation on Control of Industrial Air Pollution", it was seen that the emission mass flow rates were below the limit values given in the regulation. The calculations were made based on the assumption that all work machines operate simultaneously and continuously in their areas of use, and in reality, such an application is not very possible. Therefore, the emission levels that will occur in reality will be lower than the emission levels found in the calculations.

Where the requirements in Türkiye differ from the levels and measures presented in the EHS Guidelines, the more stringent (such as the most stringent discharge and emission standards) will be applied in the project specification.

Noise

The sub-project activities are planned to be completed in ~2 month. Within the scope of the sub-project, work will be carried out during the daytime, 6 days a week, 8 hours a day.

[5] https://sbsolar.com.tr/1kw-kac-hp-bir-beygir-kac-kw?srsltid=AfmBOopeJLuU2e08CtSYKdRWghT6TSx7iJDNzzfTjy0U2vio8kOh7QKR

The sound power levels of the equipment were calculated according to the formulas given below according to the permitted sound power levels defined in the table given in Article 5 of the “Regulation on Noise Emission in the Environment Created by Equipment Used in Open Areas”, which was published in the Official Gazette dated 30.12.2006 and numbered 26392 and entered into force, and data from similar activities were also taken into account.

Table 7. Equivalent Noise level to the distances According to Distribution

Distance (m)	40	50	100	200	300	400	500	750	1000
Equivalent noise level (dBA)	64.4	62.3	56.0	49.3	45.3	42.4	40.1	35.8	32.8

Since the closest house to the sub-project area is 850 meters away, it has been determined that it will remain below the limit value specified in the Environmental Noise Control Regulation published in the official gazette dated 30.11.2022 and numbered 32029.

Table 8. Environmental Noise Level Limit Values (Environmental Noise Control Regulation)

Noise Source	**Measured Parameter**	**Environmental Noise Level**		
		Daytime (07:00 - 19:00)	**Evening (19:00 - 23:00)**	**Night (23:00 - 07:00)**
Industrial facilities transportation resources	**LAeq,5min.**	**65 dB(A)**	**60 dB(A)**	**55 dB(A)**
Workplaces(2)	LAeq,5min.	Background + 5 dB(A)		Background + 3 dB(A)
In case of more than one workplace	LAeq,5min.	Background + 7 dB(A)		Background + 5 dB(A)
All sources	LCmax	100 dB(C)		

(1) : These limit values are valid as of 31.12.2023. These limit values are valid for each 1/3 octave of the specified frequency range band. In the acoustic reports prepared until this date, environmental noise measurement results and measurement results measures identified are included.
(2) : Each workplace contributing to the background noise level is jointly responsible for meeting this limit value. Each workplace takes necessary measures according to their contribution to noise.

Table 9. IFC General EHS Guides Noise Levels

Buyer	**Daytime (07:00 - 22:00)**	**Night (22:00 - 07:00)**
Settlement Areas	**55 dB(A)**	**45 dB(A)**
Commercial/industrial areas	70 dB(A)	70 dB(A)

The anticipated noise level at the nearest sensitive receptor is below the threshold limits defined by the IFC Noise Guidelines. The calculations were made assuming that all equipment will operate simultaneously. In real life, lower environmental noise levels are expected. In addition, in case of any complaints about noise, measurements will be taken to determine the environmental noise level caused by construction work and if it is high, additional measures such as barriers, arrangement of working hours, etc. will be taken.

Appendix-14. Tree Planting Commitment Letter

T.C.
GÜRSU BELEDİYE BAŞKANLIĞI
Fen İşleri Müdürlüğü

TUTANAK

İlçemiz Ericekköyü Mahallesi 3082 ada, 92 parselde kurulacak olan 0,99 MW Güneş Enerji Santrali (GES) Tesisi PUMREP kapsamına alınmıştır. Proje alanı içinde ekonomik değeri olmayan, meyve vermeyen tipte ağaç ve çalıların GES sahasının kurulumu esnasında enerji sahası için kesilmesi gerektiği durumunda Gürsu İlçe sınırları içerisinde en az sökülecek kadar ya da daha fazla sayıda ağaçlandırma yapılacağını taahhüt ederim.

HATİCE ÖZTÜRK
PEYZAJ YÜK. MİMAR

YILMAZ YILMAZ
ZİRAAT MÜHENDİSİ

ÜMRAN ATEŞ
BELEDİYE BAŞKAN YARDIMCISI

Appendix-15. Opinion of the Provincial Directorate of Protection of Natural Assets

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

Sayı : E-17098436-252.99-8348942
Konu : Görüş Hk.

GÜRSU BELEDİYE BAŞKANLIĞINA

İlgi : 12.12.2023 tarihli ve 80770700-115.02.99-36450 sayılı yazınız.

İlgi yazı ile; İlimiz, Gürsu İlçesi, Mülkiyeti belediye başkanlığınıza ait olan Ericek Mahallesi, 3082 ada 92 parsel üzerinde, "Güneş Enerji Santrali" yapımı planlanmakta olduğundan bahsedilmiştir. Söz konusu parsele ait ekte sunulan veriler doğrultusunda, proje alanına ilişkin kurum görüşümüz talep edilmektedir.

Söz konusu taşınmaz 3621 sayılı Kıyı Kanunu ve Kıyı Kanununun Uygulanmasına Dair Yönetmelik kapsamında kıyı kenar çizgisi tespiti yapılması gereken alanlar içerisinde kalmamaktadır.

Konuyla ilgili olarak 2863 sayılı Kültür ve Tabiat Varlıklarını Koruma Kanunu kapsamında Sit Alanları Yönetim Sisteminde yapılan incelemede; söz konusu taşınmaz mevcut onaylı doğal sit ve özel çevre koruma alanı içerisinde kalmamaktadır.

Ayrıca; yapılacak çalışmada ÇED konusunda görüşe ihtiyaç duyulması halinde, ÇED başvurularının İl Müdürlüğümüz web sitesindeki evraklarla birlikte e-ÇED sisteminden yapılması gerekmektedir.

Bilgilerinizi arz ederim.

Mehmet Ersan AYTAÇ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürü V.