Republic of Türkiye

Ministry of Environment, Urbanization and Climate Change

PUBLIC AND MUNICIPAL RENEWABLE ENERGY PROJECT (PUMREP) (P179867)

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

MARCH 2023

ABBREVIATIONS AND ACRONYMS

BCM	Billion Cubic Meter
CIF IP	Climate Investment Fund Investment Plan
CRI	Corporate Result Indicator
CTF	Clean Technology Fund
CSTMP	Community Safety and Traffic Management Plan
DSI	Design-Supply-Installation
EE	Energy Efficiency
EEPB	Energy Efficiency in Public Buildings
E&S	Environmental and Social
EHSG	Environmental, Health and Safety Guidelines
EIA	Environmental Impact Assessment
ER	Emission Reduction
ESA	Environmental and Social Assessment
ESF	World Bank Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
EOHS	Environment and Occupational Health and Safety
ESOHS	Environment,Social and Occupational Health and Safety
ESS	Environmental and Social Standards
EU	European Union
FIT	Feed-In-Tariff
GDCA	Directorate General of Construction Affairs
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GM	Grievance Mechanism
GWh	Gigawatt hour
IBRD	International Bank of Reconstruction and Development
IFI	International Financial Institution
ILO	International Labor Organization
IPF	Investment Project Financing
KPIs	Key Performance Indicators
LMP	Labor Management Procedures
M&E	Monitoring and Evaluation
MoAF	Ministry of Agriculture and Forestry

MoCT	Ministry of Culture and Tourism
MoEUCC	Ministry of Environment, Urbanization and Climate Change
MoFSS	Ministry of Family and Social Services
MoH	Ministry of Health
MoNE	Ministry of National Education
MoT	Ministry of Trade
MoYS	Ministry of Youth and Sports
MRV	Measurement, Reporting, and Verification
MW	Megawatt
MWh	Megawatt hour
NCCS	National Climate Change Strategy
NDC	Nationally Determined Contribution
NEEAP	National Energy Efficiency Action Plan
NZEB	Near-Zero Energy Buildings
OECD	Organization for Economic Co-operation and Development
OHS	Occupational Health and Safety
OHSP	Occupational Health Safety Plan
PAD	Project Appraisal Document
PAP	Project Affected People
PCN	Project Concept Note
PDoEUCC	Provincial Directorate of Environment, Urbanization and Climate Change
PIU	Project Implementation Unit
PDO	Project Development Objective
POM	Project Operational Manual
PPR	Project Progress Reports
PPP	Pollution Prevention Plan
PUMREP	Public and Municipal Renewable Energy Project
PV	Photo Voltaic
RCA	Root Cause Analysis
RE	Renewable Energy
SEA/SH	Sexual Exploitation and Abuse/Sexual Harassment
SEP	Stakeholder Engagement Plan
SPP	Solar Power Plant
SSSEP	Sub-project Specific Stakeholder Engagement Plans
TA	Technical Assistance
WB	World Bank

WBG	World Bank Group
WHO	World Health Organization

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Executive Summary

Türkiye is at a crossroads regarding climate change mitigation, while the country is vulnerable to climate impacts. Greenhouse gas (GHG) emission increases in Türkiye have been slower than economic growth and its per capita emissions are lower than European Union (EU) countries (4.8 vs 6.1 tons of CO2 in 2019, for Türkiye and EU average, respectively). However, its coal dependency is high, currently representing about one-third of total electricity generation. Meanwhile, Türkiye has a "high vulnerability" in 9 out of 10 climate vulnerability dimensions, compared with a median of 2 out of 10 in other OECD countries[1].

The government has recognized the importance of energy efficiency (EE) as evidenced by its inclusion in various policy documents. The National Energy Efficiency Strategy of 2012 calls for a 10 percent reduction in energy intensity across all sectors, and the National Energy Efficiency Action Plan (NEEAP), approved in January 2018, calls for US$11 billion investment in energy-saving measures. In 2016, the Ministry of Energy and Natural Resources (MENR) commissioned a study to assess the potential for energy efficiency in public buildings. Türkiye's reduction target for 2030 has been increased from 21% in emissions to 41%. Thus, it will have made an emission reduction of approximately 500 million tons by 2030.

From this point of view, scaling up renewable energy (RE) has been at the core of Türkiye's development policies and will continue to play a critical role in meeting its net zero emission targets. Despite impressive growth in the renewable energy market, distributed renewable resources are currently underdeveloped in Türkiye. Türkiye uses only an estimated 3 percent of its solar and 15 percent of its onshore wind potential[2].

This Project aims to reduce energy use in central government buildings and inform the development of sustainable financing mechanisms to support a scaled-up, national program for energy efficiency in public buildings such as universities and/or administrative ones by using renewable sources. The project will support the Government of Türkiye to scale up renewable energy use in the public sector by focusing on central government buildings. The Project will contribute to expanding the RE market in public facilities to use sustainable energy solutions to deliver on the country's climate mitigation commitment and enhance energy security.

Component 1 will support introducing RE technologies in central government and central-government-affiliated buildings (e.g., public buildings under central ministries, universities, and hospitals) and will be implemented by the General Directorate of Construction Affairs (GDCA) under the Ministry of Environment, Urban and Climate Change (MoEUCC). Component 1 is divided into Sub-component 1a focusing on primarily PV panels of RE investments, and Sub-Component 1b, combining RE investments with heat pumps and efficient lighting installation for 3 or 5 pilot buildings.

Component 2 will support introducing RE technologies in municipalities and will be implemented by Iller Bankası A.S. (Ilbank). The RE installations will be primarily used to offset the overall energy consumption from public facilities (e.g., administrative buildings, water supply, water treatment, public lighting, etc.) and thus reduce the municipalities' energy bills. Subprojects in the pipeline include solar PV (both rooftop and ground-mounted), wind, and in-pipe micro-hydropower (hydro-turbines to harvest energy from water flowing through existing pipelines in water utility or treatment facilities).

Component 3 will finance project management and implementation support activities, including, inter alia, project development costs for early subprojects, such as marketing and outreach; preparation and/or technical review of feasibility studies; day-to-day project management such as bidding document preparation, tendering process management, contract management, supervision of installation and works. This component will be carried out by both MoEUCC and Ilbank.

Project Beneficiaries

[1] World Bank (2022) Country Climate and Development Report - Türkiye

[2] IEA (2021) "Türkiye's success in renewables is helping diversify its energy mix and increase its energy security"

The immediate beneficiaries in the Project will be the ministries and other central government institutions, such as the Ministry of Health (MoH), Ministry of Family and Social Services (MoFSS), Ministry of Youth and Sport (MoYS), Ministry of Agriculture and Forestry (MoAF), Ministry of Culture and Tourism (MoCT), Ministry of National Education (MoNE), Ministry of Energy and Natural Resources (MENR), and the Council of Higher Education (state universities). Public buildings to be installed PV panels would include hospitals, dormitories, governor buildings, university campuses, ministerial office buildings, libraries, conference centers, etc. Citizens who use services provided by the central government and municipal facilities targeted by the Project are also expected to indirectly benefit since budgetary resources saved from energy bills could be deployed to enhance other priority services.

Project Location

An initial pipeline of about 120 subprojects in central government facilities has already been identified, amounting to a total generation capacity of nearly 90 MW . This pipeline includes ground mounted, car park , and rooftop solar PV installations. GDCA is in the process of evaluating additional candidate subprojects against key eligibility criteria for inclusion in the pipeline.

Baseline Analysis

The general objective of the project is to increase the use of renewable energy in public facilities. As mentioned previously above, 120 sub-projects have already been identified but not clarified yet. Baseline information will be mainly derived from the documents provided by the Feasibility Study Consultant. When the list of public buildings is selected and the location of the sub-projects is identified, a description of the geographical conditions along with the available environmental and social baseline data of the project area will be detailed. In this document, general baseline information and data on greenhouse gas emissions, climate, seismicity, water resources, and consumption and waste of Türkiye are provided.

Project Risk Ratings

Environmental & Social Risk Rating is "Moderate" as the physical works envisaged under the project Component 1 will not generate irreversible adverse environmental impacts and are expected to be temporary and reversible, moderate in magnitude and nature, and sub-project sites are not located in environmentally sensitive areas. Nor are they expected to generate serious adverse effects on human health and the environment. The activities under Component 1 will exclude any subprojects that require land acquisition or new land use that may result in access restrictions to land. Only the existing public lands will be utilized for the project activities and the subprojects with new land acquisition needs or where municipalities or other public institutions have used eminent domain to acquire land in anticipation of the project in the past five years will be excluded from project financing.

Purpose of Environmental and Social Management Framework.

The main objectives of this ESMF is (i) to establish procedures for the Environmental and Social (E&S) screening, review, approval, implementation, and monitoring of activities, (ii) to provide guidance on the preparation of the sub-project specific Environmental and Social Management Plan (ESMP) and/or Environmental and Social Management Plans checklist (ESMP checklist), (iii) to specify the institutional arrangements, responsibilities and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to sub-projects, (iv) to determine the training, capacity building needed to successfully implement the provisions of the ESMF building trainings, (v) to address mechanisms for public consultation and disclosure of project documents as well as summarizes the stakeholder engagement and grievance mechanism which will be detailed in a Stakeholder Engagement Plan (SEP) and sub-project specific Stakeholder Engagement Plans (SSSEP), (vi) to integrate relevant measures from the Labor Management Procedures (LMP) to address labor risks associated with the project.

Institutional capacities to manage environmental and social risks and impacts.

The project will be implemented by MoEUCC through its GDCA. Within GDCA a separate department, the Department of External Investments has been established in 2019 to work as the dedicated Project Implementation Unit (PIU) to manage the ongoing Energy Efficiency Public Buildings Project's (EEPBP) Component 1 and Component 2, which consists of Project implementation and TA activities related to the public building sector. This department is responsible for the day-to-day management of the Energy Efficiency Public Buildings Project (P162762) under terms of reference and with adequate staffing, and with qualifications and functions acceptably to the Bank. The department/PIU currently includes about 16 technical staff and 10 individual consultants hired to support in the areas of procurement, financial management, engineers (electrical, mechanical, civil) project assistance, environment and social issues, and communication. A new team will be established under this existing PIU to administer all aspects of the proposed Project while benefitting from cross-fertilization from the staff and consultants already working on the implementation of the EEPBP.

Potential environmental impacts.

The proposed project activities could generate environmental impacts associated with noise, dust, air and water pollution, solid waste generation, health hazards, labor safety issues, etc. The environmental risks are expected to be typical for installation works of PV panels and temporary by nature, site-specific, and can be easily mitigated by applying best construction and/or energy supply or energy efficiency practices and relevant mitigation measures.

Potential social impacts.

Although no significant adverse social impacts are anticipated as part of the Project, potential social impacts may be related to labor and working conditions, OHS, and community health and safety issues. Regarding the risks related to labor and working conditions, Turkish labor law is comprehensive and consistent with the requirements of ESS 2. However, since the project will be focusing mostly on solar PV installations and there are allegations of forced labor risks associated with the suppliers, appropriate mitigation measures will need to be integrated into the project design.
Environment and Social Management Framework (ESMF) structure.

The ESMF was prepared based on the following: (1) Technical documentation provided by WB; (2) Desk review of the Republic of Turkey's environmental, social, and occupational health and safety laws, regulations, and policies; (3) World Bank ESF, World Bank Environmental, Health and Safety General Guidelines (4) Meetings and discussions with WB's Environmental and Social Experts and Consultants.

The document consists of 10 chapters that outline environmental and social assessment procedures and mitigation requirements in line with the Bank's ESF requirements and standards for the sub-projects which will be supported by the Project.

i. Chapter One includes the Brief Description of the Project Context and the project development objectives and components.

ii. Chapter Two the Baseline Analysis includes general information about greenhouse gas emissions, climate, water resources, and consumption and solid waste of Türkiye.

iii. Chapter Three describes the national Legal, Regulatory, and Policy Framework and provides an overview of laws and regulations that have relevance to environmental and social issues for the PUMRE Project.

iv. Chapter Four has a summary of the World Bank's Environmental and Social Standards (ESS) that are designed to support Clients' projects. The ESS requirements are related to the identification and assessment of environmental and social risks and impacts associated with projects supported by the Bank through Investment Project Financing.

v. Chapter Five analyzes Potential Positive and Adverse Environmental and Social Risks and Impacts, and associated mitigation measures related to the project activities implementation, and application of the ESSs to the sub-projects.

vi. Chapter Six describes the Implementation Arrangements. It provides details on procedures, criteria, and responsibilities for sub-project preparation, screening, appraisal, implementation, and monitoring.

vii. Chapter Seven describes the stakeholder engagement procedures that are tailored to project activities and stakeholder groups and defines the Project's Grievance Mechanism for both workers and communities.

viii. Chapter Eight describes the ESMF Implementation Budget

ix. Chapter Nine includes ESMF's implementation of sub-management project-level monitoring instruments.

x. Chapter Ten provides brief information on the disclosure and consultation of the ESMF.

Relevant Annexes are enclosed at end of this document to complement the above-mentioned chapters.

ESMF Disclosure and Consultation

The final ESMF will be disclosed on the MoEUCC website in Turkish and English language. MoEUCC will officially submit the final ESMF to the World Bank for disclosure in English and Turkish on the WB external webpage. The final version of this document will be used by respective government agencies and other Project stakeholders and partners during the project implementation.

ESMF Implementation Budget

The total budget for the implementation of the ESMF is $ 5 million + VAT and 0,2 % of the Project Budget. This budget covers individual environmental, social, health and safety consultants, monitoring activities, preparation of site-specific ESMPs, SEPs, and LMPs, social and environmental trainings, awareness, information dissemination, capacity building, implementation of the site-specific SEPs, LMPs ESMPs' measures.

1. INTRODUCTION

1.1. Country Context

Türkiye enjoyed high economic growth rates between 2002-2017 but experienced a significant downturn in 2018-2019. Türkiye achieved rapid economic and social development in the 2000s, with real Gross Domestic Product (GDP) increasing by 50 percent by 2008. Since the Global Financial Crisis, rapid growth continued but was increasingly associated with stagnant productivity, a rising current account deficit, and growing foreign exchange-denominated debt stock. Policies to stimulate the economy led to economic overheating in 2017, double-digit inflation, and a large current account deficit. The cumulative effects of these and other economic vulnerabilities came to a head in mid-2018, with the tightening of global economic conditions combined with challenges in international relations. These events triggered a significant depreciation of the Turkish lira and turmoil in the Turkish economy. Spending fell, inflation accelerated, and the corporate sector's debt increased. Türkiye experienced three-quarters of negative growth from late 2018 to mid-2019, coupled with sizable job losses. GDP per capita fell to US$9,793, from a high of US$12,582 in 2013, while poverty reduction progress stalled in 2018.

An emergent economic recovery starting in late 2019 was hampered by the COVID-19 pandemic, but the swift government policy led to a sharp rebound in the economy. Throughout late 2018 and 2019, the economy went through significant adjustments. Current account imbalances declined significantly, banks and corporates reduced their exposure to foreign currency debt, private sector credit growth resumed, and demand started to recover. Its economic activity was rebounding with strong growth in 2019 Q4 but was disrupted by the onset of the COVID-19 pandemic in early 2020. Like in many other countries, the COVID-19 crisis turned into a deep economic turmoil in Türkiye, leading to a sharp contraction in GDP (10.4 percent, year-on-year) in 2020 Q2. The Government's economic policy response to Covid-19 was swift but focused on loosening monetary policy and rapid credit expansion, resulting in a significant increase in economic activity in late 2020 that more than offset the decline recorded earlier in the year and double-digit GDP growth in 2021 (11 percent) with the economy and employment surpassing pre-pandemic levels. However, the policy frameworks to ensure a strong economic rebound during the pandemic also heightened macroeconomic risks, including rising inflation, currency depreciation, increasing corporate and banking sector vulnerabilities, and a decline in reserve buffers.

Türkiye's economic growth is projected to slow down in the coming years and faces several downside risks, particularly with the ongoing global energy crisis. Its growth rate is 3,9 percent in the third quarter of 2022 and the 2023 expectation is 2,7 percent. Stronger than anticipated private consumption and net exports drove growth in the first half of 2022, but are expected to weaken in the second half of 2022, as macroeconomic volatility intensifies, inflation erodes the purchasing power of households, and external demand weakens. The poverty rate is projected to remain above pre-2019 levels due to the persistently high inflation rate that affects the lowest-income households. External risks remain elevated given Türkiye's growing current-account deficit, high FX share of public debt, and low FX reserves. Türkiye has faced a worsening trade deficit which leaped almost 300 percent year-on-year in September 2022 to $10.4 billion from $2.6 billion in the previous year, as surging energy import costs continue to widen the shortfall. Its energy imports constituted around one-third of total imports in the first nine months of the year.

1.1.1. Sectoral and Institutional Context

Long-term sustainable growth in Türkiye requires a reduction in the physical, social, and economic shocks associated with geophysical and climate disasters with a commensurate reduction in greenhouse gas (GHG) emissions and energy intensity.

The government has recognized the importance of energy efficiency (EE) as evidenced by its inclusion in various policy documents. The National Energy Efficiency Strategy of 2012 calls for a 10 percent reduction in energy intensity across all sectors, and the National Energy Efficiency Action Plan (NEEAP), approved in January 2018, calls for US$11 billion investment in energy-saving measures. In 2016, the Ministry of Energy and Natural Resources (MENR) commissioned a study to assess the potential for energy efficiency in public buildings.

Türkiye has made ambitious climate commitments, having ratified the Paris Agreement in October 2021 and committed to net zero emissions by 2053. Türkiye has underpinned its institutional arrangements to support climate change issues, including the recent creation of the Ministry of Environment, Urbanization and Climate Change (MoEUCC). Following up on the ratification of the Paris agreement, the government is preparing its long-term climate change strategy and action plan to include ambitious 2053 targets on climate change mitigation and adaptation and has just submitted its updated National Determined Contribution to the United Nations Framework Convention on Climate Change (UNFCCC) at COP27 in November 2022. Türkiye's reduction target for 2030 has been increased from 21% in emissions to 41%. Thus, it will have made an emission reduction of approximately 500 million tons by 2030.

“The need to completely transform the global energy system from fossil fuels to renewable energy sources is critical to prevent the increasingly dangerous effects of climate change. Access to reliable air, water, and climate information and services will become increasingly important to strengthen the resilience of energy infrastructure and support the energy transition.” These were the core message of the World Meteorological Organization on Energy Day at the UN climate change negotiations COP27 on November 15, 2022.

From this point of view, scaling up renewable energy (RE) has been at the core of Türkiye’s development policies and will continue to play a critical role in meeting its net zero emission targets. Türkiye is endowed with considerable renewable energy resources, including solar, wind, and geothermal. Utilizing these RE resources and achieving energy security has been reflected in several government strategy documents such as the Electricity Sector Security of Supply Strategy (2009), National Renewable Energy Action Plan (2014), Energy Strategic Plan (2019-2023), and Eleventh Development Plan (2019-2023). These policies together have acted as key drivers for the impressive growth of RE in the past decade. At the end of September 2022, RE (including hydroelectric, wind, solar, and geothermal power plants) constituted about 54 percent of the total installed capacity and 45 percent of Türkiye’s power generation[3]. This achievement has well exceeded the RE target of 38.8 percent in the power generation mix by 2023 set in the government strategic documents mentioned above, placing Türkiye as the 5th largest RE generator in Europe and the 12th largest in the world[4]. The recently published World Bank Climate Change Development Report (CCDR) calls for further decarbonization of the power sector as one of the key pillars to achieve the country’s net zero emissions target, with an estimated 75 percent share of RE in power generation required by 2030.

Despite impressive growth in the renewable energy market, distributed renewable resources are currently underdeveloped in Türkiye. Türkiye uses only an estimated 3 percent of its solar and 15 percent of its onshore wind potential[5]. For example, the solar market in Türkiye has grown rapidly over the last decade, with installed solar photovoltaic (PV) capacity growing from 40 MW in 2014 to about 7,815 MW at the end of 2021. A large portion (6,907 MW) of the installed solar PV capacity is the unlicensed generation, mostly built under the previous feed-in-tariff (FiT) scheme of 13.3 USD cents/kWh[6]. However, most unlicensed generation is considered centralized to avoid administrative

[3] Ministry of Energy and Natural Resource of Türkiye, https://enerji.gov.tr/infobank-energy-electricity

[4] *https://www.trade.gov/country-commercial-guides/turkey-electric-power-renewables-smart-grid-energy-storage-civil-nuclear#:~:text=Turkey%20currently%20has%20approximately%2031%2C500,biomass%20power%20plant%20installed%20capacity*.

[5] IEA (2021) “Türkiye’s success in renewables is helping diversify its energy mix and increase its energy security”

[6] Effective for the projects commissioned before June 30, 2021

procedures rather than truly distributed systems. Due to a lack of a statement defining the capacity of distributed generation systems in the current legislation, no official numbers presenting the size of distributed solar PV today. Nevertheless, the distributed generation is considered nascent as one estimate says that only 409.8 MW out of a total 6,667 MW installed capacity in 2020 was distributed solar PV. In parallel, the government has developed a program to support the utility-connected PV market through auctions (the YEKA program), which have had several successful rounds.

A new legislative package for unlicensed projects was issued in May 2019, with its subsequent amendments, to strengthen the regulatory framework for an unlicensed generation[7]. The package provided a well-defined list of electricity generation options, including distributed solar PVs, for which a license to operate would not be required if used mainly for self-consumption and if produced at a specific consumption point. The new framework abolished the FiT support for unlicensed projects and introduced a net-billing scheme. It also required unlicensed projects to be below 5 MW (from previously 1 MW), capping their capacity to the customer's contracted capacity with the utility, thus making unlicensed projects mainly dedicated to self-consumption (with the possibility for certain categories of consumers of selling excess generation to the grid at the retail price as per the net-billing policy). More recently, the requirement for the generation facilities to be located at the consumption point or in the same distribution zone has been lifted for some consumer categories.

This Project aims to reduce energy use in central government buildings/municipalities and inform the development of sustainable financing mechanisms to support a scaled-up, national program for energy efficiency in public buildings such as universities and/or administrative ones by using renewable sources. The project will support the Government of Türkiye to scale up renewable energy use in the public sector by focusing on central government buildings and municipalities. The Project will contribute to expanding the RE market in public facilities to use sustainable energy solutions to deliver on the country's climate mitigation commitment and enhance energy security.

1.2. Project Background

The building sector is one of the largest energy-consuming and greenhouse gases (GHG) emitting sectors in Türkiye. The building sector including residential, commercial, and public service consumed 1.48 million TJ in 2019, about one-third of the country's total final energy consumption (and more than the industry sector). Given the high rate of urbanization and the fast growth of the building stock at 4 percent per year, the building sector will continue to drive the country's energy consumption as its energy use is expected to double by 2050. In addition, the building sector is a direct consumer of coal, oil, and natural gas to meet its heating needs. Despite a slightly decreasing trend, almost 40 percent of final coal consumption in 2019 in Türkiye was used to meet the heating demand in buildings (27.4 percent for commercial and public services and 12 percent for residential). As a result, this sector emitted about 57 Mt of CO2 in 2019, about one-quarter of the direct GHG emissions from the final consumption sector of the country. Both National Energy Efficiency Action Plan (NEEAP, 2017-2023) and National Climate Change Action Plan (2010-2023) highlight the building sector as an indispensable component to meeting the country's energy efficiency (EE) and climate mitigation goals.

While considerable efforts have been made to reduce energy demand through energy efficiency measures, there is significant untapped potential to further decarbonize the building sector through renewable energy. The Government has launched and implemented various EE improvement programs or combined EE and RE programs in the building sector, some of them supported by International Financial Institutions (IFIs), including investment financing from the World Bank. While EE should be the first step to avoid unsustainable energy consumption, as it is typically much cheaper to save a unit of energy through EE than generating it, the remaining energy needs of an efficient building can be fully or partially met using distributed RE located at the building site, contributing to deeper decarbonization. Consistent with this principle, the Bank is supporting two

[7] Presidential Decree (CK) dated 9 May 2019 and numbered 1044

investment projects, (i) Türkiye Energy Efficiency in Public Building (P162762), which supports EE and distributed RE measures in public buildings that are seismically safe, and the (ii) Seismic Resilience and Energy Efficiency in Public Buildings Project (P175894), which supports EE and distributed RE measures in public buildings that require structural measures for seismic safety. However, there is significant remaining investment potential for distributed RE in newer public buildings that are already sufficiently energy-efficient and seismically safe.

Global experiences have demonstrated that adopting RE in the public sector can help stimulate market development and show leadership in sustainable energy use. Many countries in Europe, North America, and Asia have legislative mandates for renewable energy use in public buildings or national programs to invest in on-site RE projects in government agencies. Global experiences show that these initiatives in the public sector help build the capacity of market actors such as project developers, installation companies, component manufacturers, etc., and spur market development by demonstrating positive results. In Türkiye, for example, the Government's recent investment in EE in public buildings has helped to build the capacity of local energy auditors and design companies, to introduce new business models such as performance-based contracts for EE building retrofits, and to demonstrate that significant energy savings can be achieved through EE retrofits in buildings.

1.2.1. Project Objectives And Components

The Project Development Objective (PDO) is to increase the availability and affordability of solar PV panels within the scope of energy efficiency on the rooftop, ground-mounted, and car parks for central government buildings in Türkiye. Heat pumps and efficient lighting installation will be implemented in 3 or 5 of these buildings as pilots. The Project activities are aligned with Türkiye's NDCs to the Paris Climate Agreement that aims to reduce up to 21 percent of GHG emissions from business-as-usual scenarios by2030[8],

PDO level indicators: Progress made under the proposed project will be monitored according to the following key project performance indicators:

i) Renewable Energy generation capacity (other than hydropower) constructed under the project (Megawatt, Corporate Result Indicator (CRI)

ii) Net greenhouse gas (GHG) emission reductions (as a result of installing RE) (Metric tons/year, CRI)

Additional preliminary indicators on gender and citizen engagement are discussed below in the relevant sections.

- Increase in the number of women in the energy sector and design/construction supervision firms contracted under the Project who are key staff (Percentage)
- Renewable energy and energy efficiency good practices, case studies, guides and model designs developed and disseminated (Number)
- Stakeholders' grievances that are addressed and closed (Percentage, and disaggregated by gender

The Project will be financed by the IBRD loan and is expected to be supported by a grant from Climate Investment Fund Investment Plan (CIF IP). The Project consists of three components: (i) RE investments in central government buildings; (ii) RE investments in municipal buildings; and (iii) technical assistance (TA) and implementation support. The description of each Project component is as follows.

[8] UNFCC (2016), Intended nationally determined contributions (INDCs).

Component 1. Renewable Energy investments in central government.

This component will support introducing RE technologies in central government and central-government-affiliated buildings (e.g., public buildings under central ministries, universities, and hospitals) and will be implemented by the General Directorate of Construction Affairs (GDCA) under the Ministry of Environment, Urban and Climate Change (MoEUCC).

Component 1 is divided into Sub-component 1a, which focuses on RE investments, and Sub-component 1b, which is a pilot to combine RE investments with heat pumps and efficient lighting installation in buildings.

Sub-component 1a. Renewable energy investments in central government facilities. This sub-component will support investments in RE technologies, primarily solar PV. RE installations will be primarily used to offset the facilities' electricity (i.e., for self-consumption purposes rather than to generate power to sell to the grid). An initial pipeline of about 120 subprojects in central government facilities has already been identified, amounting to a total generation capacity of nearly 90 MW for an estimated investment of about US$160 million. This pipeline includes ground mounted (US$24 million), car park (US$129 million), and rooftop (US$7 million) solar PV installations.

Subcomponent 1b. Pilot to combine renewable energy investments with heat pumps and efficient lighting installation in central government facilities. This subcomponent will support investments in pilots for a small subset of the sub-project portfolio (3 to 5 sub-projects) to combine solar PV investments with investments in light-emitting diode (LED) to replace inefficient lighting technologies and electrification of heating (i.e., substituting fossil-fuel boiler capacity with heat pumps to support both heating and cooling), which would allow additional RE capacity to be deployed and ultimately reduce the buildings' emissions. The heat pump uses technology similar to that found in a refrigerator or an air conditioner. It extracts heat from a source (surrounding air, geothermal, energy stored in the ground or nearby sources of water etc.) In buildings, the heat is delivered using either forced air or hydronic systems such as radiators or under-floor heating. Many of the heat pumps can also provide space cooling in summer in addition to meeting space heating needs in winter. Thus, heat pumps become more advantageous for air conditioning with reversible functions. The candidate sub-projects for the pilots will be selected during Year 1 of the Project. Preparation and design of the sub-projects are planned for Year 2 so that the installation and works can be completed in Years 3 and 4.

Potential eligibility criteria for central government buildings would include, inter alia, but are not limited to;

(i) ownership of the facility is by or assigned to the central government
(ii) no plans for move, closure, demolition, or privatization of the facility;
(iii) no high flood risk;
(iv) the proposed RE investment qualifies for "unlicensed" electricity production under the "Unlicensed Electricity in the Electricity Market Production Regulation" No. 30772 published in the official gazette on May 12, 2019, and its subsequent amendments;
(v) the RE technology is solar PV, solar water heating, and in-pipe micro-hydropower (hydro-turbines to harvest energy from water flowing through pipes in, e.g., water utilities), wind, or battery storage in combination with RE;
(vi) the feasibility study confirms the financial viability with a maximum simple payback period of 15 years;

For rooftop solar PV subprojects, the following additional eligibility criteria apply:

(i) Building must be structurally and seismically safe. A building is considered structurally and seismically safe if the building is officially assessed by a civil engineer (registered with the Turkish Chamber of Civil Engineers) as structurally and seismically safe, and such assessment has been accepted by MoEUCC.

(ii) Building must have adequate energy performance. For the buildings on which rooftop panels are installed, a building could be considered to have adequate energy performance if the building

(ii.i) has a Turkish Class C energy performance certificate or higher;

(ii.ii) had a full EE renovation in the past 10 years or

(ii.iii) was issued its construction permit in or after 2011.

Component 2. Renewable Energy investments in municipalities

This component will support introducing RE technologies in municipalities and will be implemented by Iller Bankası A.S. (Ilbank). The RE installations will be primarily used to offset the overall energy consumption from public facilities (e.g., administrative buildings, water supply, water treatment, public lighting, etc.) and thus reduce the municipalities' energy bills. A preliminary pipeline of about 100 subprojects has been provided by Ilbank, including the tentative capacity of the RE installations (ranging from 0.2 MW to 5 MW), required investment costs, and the status of grid connection permits. Although most of these proposed subprojects are solar PV (both rooftop and ground-mounted), wind, and in-pipe micro-hydropower (hydro-turbines to harvest energy from water flowing through pipes in, e.g., water utilities).

Component 3. Technical Assistance and Project Implementation Support

This component will finance project management and implementation support activities, with both implementing agencies also providing in-kind contributions. Component 3 is divided in two subcomponents.

Subcomponent 3a. Technical assistance and project implementation support for MoEUCC
This component will finance project management and implementation support activities, including, inter alia, project development costs for early subprojects, such as marketing and outreach; preparation and/or technical review of feasibility studies; day-to-day project management such as bidding document preparation, tendering process management, contract management, supervision of installation and works; implementing financing requirements in compliance with Bank's fiduciary policies and guidelines; implementing environmental and social framework (ESF); Project monitoring and evaluation; and other Project communications.

Subcomponent 3b. Technical assistance and project implementation support for ILBANK

It will include, inter alia, early subproject development costs, such as marketing and outreach; technical review of feasibility studies; day-to-day project management, including management of procurement agent consultant(s) hired to support municipalities in the bidding process for contractors and supervision consultants; implementing financing requirements in compliance with Bank's fiduciary policies and guidelines; ensuring satisfactory implementation of Environmental and Social Management System (ESMS); project monitoring and evaluation; training, capacity building, and knowledge sharing for the Project Management Unit (PMU) staff and for contractors, municipal administrators, women in the RE field and any other relevant project stakeholders; project communications; and incremental operational costs.

Both MoEUCC and ILBANK expressed interest in pursuing certification of emission reductions (ERs) generated under the project. Under this component, the Project could support both Implementing Agencies in the development of the documentation required to register the project, the development of a Measurement, Reporting, and Verification (MRV) framework for the project data required, and the engagement with relevant government bodies on the use of the certified ERs as Mitigation Outcomes under the Nationally Determined Contribution or for compliance market transactions.

Component 4. Contingent Emergency Response Component (CERC).

This component is included in accordance with OP/BP 10.00 (Investment Project Financing), paragraphs 12 and 13, for contingent emergency response through the provision of immediate response to an Eligible Crisis or Emergency, as needed. It will allow the Government of Türkiye to respond promptly and effectively to an eligible emergency or crisis, that is a natural or human-made disaster or crisis that has caused or is likely to imminently cause a major adverse economic and/or social impact by requesting a rapid reallocation of project funds. The Project Operations Manual will specify the procedures for activating the CERC.

Component 4 is divided in two sub-components: (i) Subcomponent 4a. Contingency Emergency Response for MoEUCC, and (ii) Subcomponent 4b. Contingency Emergency Response for ILBANK.

1.2.1.1. Project Description

Implementation methods of sub-projects within the scope of Component 1(a,b) and Component 3 a carried out under the responsibility of MoEUCC are explained below.

The project will include activities of installation of PV panels, especially on rooftops, ground-mounted, and parking lots. The activities that will be carried out in the installation of panels is described below depending on the type of sub-projects.

Ground Mounted PV Panels;

1- Land Leveling

In ground-mounted installations, leveling should be done on the existing land to ensure that there is no height difference between the tables during pile driving and a homogeneous and continuous assembly.

2- Fence and Environment Lighting-Camera System

In order to ensure the safety of the materials coming to the site and that the excavations do not interfere with the on-site production, the environmental lighting cable works should be completed and the fence should be installed.

3- Construction Assembly

A soil investigation report will be prepared and then pile installation should be started with the method to be determined according to this report. Afterward, the upper construction should be continued with the steel assembly.

4- Panel Mounting

PV panel assembly should be started on the consoles whose steel construction assembly is completed.

5- Cabling and Connection

After panel assembly, string connections, and direct-current cable connections must be made. Low Voltage cabling and connections should be made between the inverter and the panel. Transformer, Mid-Voltage cell connections should be made and the facility should be ready to be energized.

6- Landscaping

Necessary correction works should be carried out in the plant area.

Rooftop PV Panels;

1- Checking the Current Situation of the Roof

According to the feasibility study report, the current situation and the statics of the roof shall be checked first.

2- Strengthening of the Roof

In case of need, the structural frame of the roof carrier system shall be strengthened.

3- Construction Assembly

The upper construction should be continued with the steel assembly.

4- Panel Mounting

PV panel assembly should be started on the consoles whose steel construction assembly is completed.

5- Cabling and Connection

After panel assembly, string connections, and direct-current cable connections must be made. Low Voltage cabling and connections should be made between the inverter and the panel. Transformer, Mid-Voltage cell connections should be made and the facility should be ready to be energized.

1.2.2.Project Location

An initial pipeline of about 120 subprojects in central government facilities has already been identified, amounting to a total generation capacity of nearly 90 MW for an estimated investment of about US$160 million. This pipeline includes ground mounted (US$24 million), car park (US$129 million), and rooftop (US$7 million) solar PV installations. GDCA is in the process of evaluating additional candidate subprojects against key eligibility criteria for inclusion in the pipeline.

Figure 1: Cities for possible sub-project pipeline (Marked with Green)

1.2.3. Purpose of Environmental and Social Management Framework

The ESMF follows both the World Bank Environmental and Social Framework (ESF) and the national legal framework for environmental, social, occupational health, and safety management. The ESMF

is the key document committed by MoEUCC to comply with national legislation and WB's ESF and respective Environmental and Social Standards (ESSs). Following the Bank's approval, this ESMF will be publicly disclosed on the website of the Project.

The main objectives of this ESMF is (i) to establish procedures for the Environmental and Social (E&S) screening, review, approval, implementation, and monitoring of activities, (ii) to provide guidance on the preparation of the sub-project specific Environmental and Social Management Plan (ESMP) and/or Environmental and Social Management Plans checklist (ESMP checklist), (iii) to define appropriate mitigation measures and monitoring arrangements related with potential environmental, social and OHS risks and impacts (iv) to specify the institutional arrangements, responsibilities and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to sub-projects, (v) to determine the training, capacity building needed to successfully implement the provisions of the ESMF building trainings, (vi) to address mechanisms for public consultation and disclosure of project documents as well as summarizes the stakeholder engagement and grievance mechanism which are detailed in a Stakeholder Engagement Plan (SEP) and Sub-project Specific Stakeholder Engagement Plans (SSSEP), (vii) to integrate relevant measures from the Labor Management Procedures (LMP) to address labor risks associated with the project under Component 1(a,b) and Component 3 a.

In order to enhance its capacity, PIU will hire at least one Environmental, one Social, and one Occupational Health and Safety experts part-time/full-time depending on the workload throughout the implementation of the project in addition to the existing PIU staff which includes full-time one environmental specialist, one social specialist, one occupational health and safety specialist. Feasibility Study Consultant, Supervision Consultants/Provincial Directorate of Environment, Urbanization and Climate Change, Design, Supply, and Installation (DSI) Consultants, and PIU Environmental, Social, and OHS Experts will receive trainings regarding ESMF implementation to properly fulfill the requirements.

2. BASELINE ANALYSIS

The general objective of the project is to increase the use of renewable energy in public facilities. As mentioned in the previous chapter, 120 sub-projects have already been identified but not detailed yet. Baseline information will be mainly derived from the documents provided by the Feasibility Study Consultant. When the list of public buildings is selected and the location of the sub-projects is identified, a description of the geographical conditions along with the available environmental and social baseline data of the project area will be detailed in this section.

In the following sections, general baseline information and data on greenhouse gas emissions, climate, seismicity, water resources, and consumption and waste of Türkiye are provided.

2.1. Greenhouse Emissions

Türkiye is at a crossroads regarding climate change mitigation, while the country is vulnerable to climate impacts. Greenhouse gas (GHG) emission increases in Türkiye have been slower than economic growth and its per capita emissions are lower than European Union (EU) countries (4.8 vs 6.1 tons of CO2 in 2019, for Türkiye and EU average, respectively). However, its coal dependency is high, currently representing about one-third of total electricity generation. Meanwhile, Türkiye has a "high vulnerability" in 9 out of 10 climate vulnerability dimensions, compared with a median of 2 out of 10 in other OECD countries. Climate-related disasters have been striking with greater frequency and intensity over the last two decades[9]. In 2019 alone, 935 extreme events occurred, caused mainly by heavy rains and floods, windstorms, snow, and hail. Climate models predict this trend to continue

[9] IEA (2021) "Türkiye's success in renewables is helping diversify its energy mix and increase its energy security"

with increasing abnormalities in precipitation patterns with more frequent extreme rain and flooding, as well as protracted drought and wildfires, and sea-level rise. The greenhouse emissions of Türkiye is given below[10]. According to the results of the greenhouse gas inventory, the total greenhouse gas emission in 2020 increased by 3.1% compared to the previous year and was calculated as 523.9 million tons (Mt) CO2 equivalent (equivalent). The total greenhouse gas emission per capita was calculated as 4 tons of CO2 eq. in 1990, and 6.2 tons of CO2 eq. in 2019. and 6.3 tons of CO2 eq in 2020.

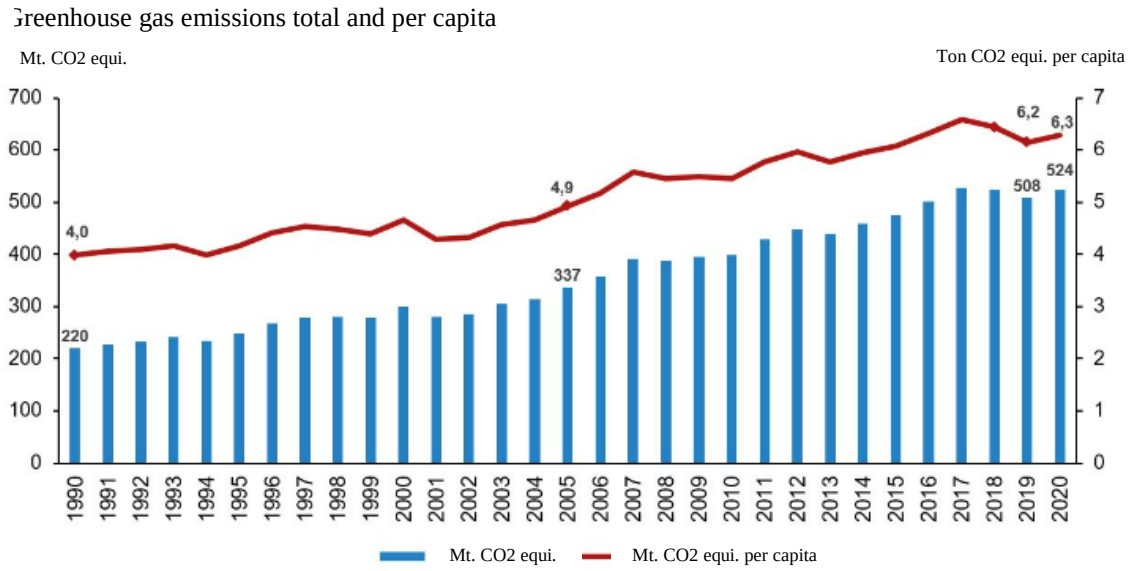


Figure 2: Greenhouse gas emissions 1990-2020

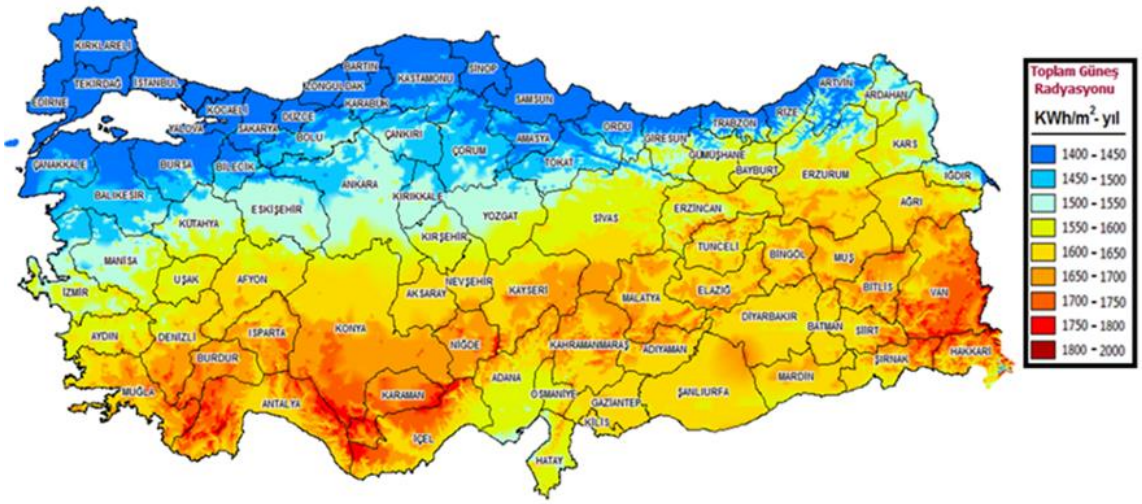


Figure 3: Photovoltaic Power Potential of Türkiye

The building sector is the main greenhouse gas emitting sector which is the direct consumer of coal, natural gas, etc. in Türkiye. To reduce these emissions, the government has encouraged to implement the renewable energy usage in the building sector. Renewable energy sources are considered geothermal, solar, wind, and biomass. Türkiye has an important solar energy potential due to its geographical location. According to the Turkey Solar Energy Potential Atlas (GEPA) prepared by the Ministry of Energy and Natural Resources, the average annual total sunshine duration is 2.741 hours and the average annual total radiation value is calculated as 1.527.46

[10] TÜİK Greenhouse Gases Emissions Statistics 1990-2020, March 30, 2022 dated Press Release

kWh/m2. The general potential outlook and monthly average global radiation distribution in GEPA are given below. Türkiye uses only an estimated 3 percent of its solar and 15 percent of its onshore wind potential[11]. The Photovoltaic Power Potential of Türkiye is given in Figure 3.

2.2. Climate

Türkiye's diverse regions have different climates, with the weather system on the coasts contrasting with that prevailing in the interior. The Aegean and Mediterranean coasts have cool, rainy winters and hot, moderately dry summers. Annual precipitation in those areas varies from 580 to 1,300 millimeters (22,8 - 51,2 inches), depending on location. Generally, rainfall is less to the east. The Black Sea coast receives the greatest amount of rainfall. The eastern part of that coast averages 1,400 millimeters (55,1 inches) annually and is the only region of Türkiye that receives rainfall throughout the year.

It is worrying that the meteorological drought in Türkiye height leads to hydrological drought and will continue to affect water resources in the coming years. Water resources are also the first to suffer from climate change. According to the findings of the climate change projection studies carried out for Türkiye, the annual average temperature increase is predicted to range between 1°C and 2°C for the 2016-2040 period, between 1.5°C and 4°C for the 2041-2070 period and between 1.5°C and 5°C for the 2071-2099 period. According to certain forecasts, the temperature rises over the final 30 years of this century (2071-2100) will be 3°C in the winter and 8°C in the summer. This change will probably also have a negative impact on Türkiye’s water budget and increase the country’s water stress.

2.3. Seismicity

Türkiye is a seismically active area within the complex zone of collision between the Eurasian Plate and both the African and Arabian Plates. Much of the country lies on the Anatolian Plate, a small plate bounded by two major strike-slip fault zones, the North Anatolian Fault and East Anatolian Fault. The western part of the country is also affected by the zone of extensional tectonics in the Aegean Sea caused by the southward migration of the Hellenic arc. The easternmost part of Türkiye lies on the western end of the Zagros fold and thrust belt, which is dominated by thrust tectonics. shows Seismicity Map of Türkiye.

[11] IEA (2021) “Türkiye’s success in renewables is helping diversify its energy mix and increase its energy security”

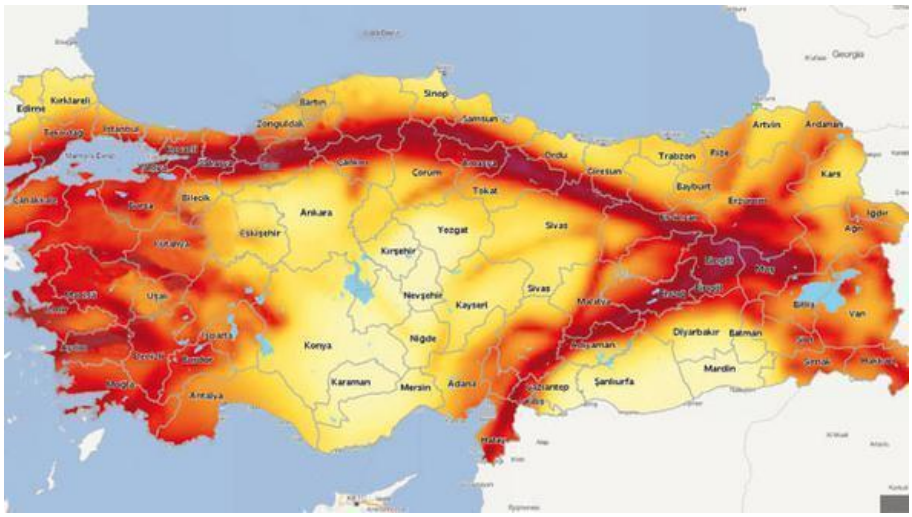


Figure 4: Seismicity Map of Türkiye

2.4. Water Resources and Consumption

Türkiye is one of the most water-rich countries of the Mediterranean, but due to a high population increase in the 2000s, the availability of water resources has decreased from around 4,000 m3 to 1,500 m3 per capita/year today. The annual average precipitation in Türkiye is approximately 574 mm, which equates to about 450 billion cubic meters (BCM) of water. Surface water potential averages 94 BCM/yr. Türkiye's total water potential (surface and groundwater) is 112 BCM/yr and 57 BCM of this amount is utilized.

Türkiye is divided into 25 hydrological basins with different catchment sizes and a wide range of annual precipitation, evaporation, and surface runoff variables. Within Türkiye's borders, 16 rivers rise in the mountains and flow into the Marmara Sea, Mediterranean Sea, Black Sea, and Aegean Sea. Konya, Akarçay, Burdur Lakes, and Lake Van Basins are closed ones with no outflow to the sea. Figure 3 shows the 25 hydrological basins.

According to studies carried out by the General Directorate of Nature Conservation and National Parks, Türkiye has 320 natural lakes. Some of these are seasonal, filling up with winter precipitation and then drying out in the summer due to a lack of precipitation. The largest lakes include Lake Van at 3,713 square kilometers (km2), Salt Lake (1,300 km2), Beyşehir Lake (656 km2), and Egirdir Lake (482 km2).

Figure 5. Water basins of Türkiye

Groundwater potential averages 18 BCM; 11.21 BCM is used as agricultural irrigation (individual irrigation, public, and cooperatives), 1.49 BCM as industrial water, and 3.92 BCM as drinking water. There were 369,054 certified wells as of the end of 2019.

Water demand in Türkiye approximately doubled in the second half of the last century. The overall water demand in Türkiye continues to increase, even more in light of the effects of drought (or climate change). Studies indicate that Türkiye has some of the highest levels of water security threat among the countries in Europe. Water availability is expected to decline to 1,000 m3 in 2050 as a result of population growth and the impact of climate change (Aktaş (2014)) and Türkiye will suffer from water scarcity in the coming years.

According to TURKSTAT forecasts, Türkiye's population will reach approximately 90 million in 2030, and accessible water will decrease from 1,404 m3/capita/year to 1,244 m3/capita/year. According to the Falkenmark Index, which classifies countries in terms of their per capita water potential, Türkiye is 'water stressed' since it has 1,000-1,500 m3 of water potential per capita per year. According to the same scale, if Türkiye's per capita per year water potential were to fall below 1,000 m3, the country would be considered 'water scarce' and measures to ensure more efficient use of water resources would be needed.

Türkiye's annual water consumption is 54 BCM, equivalent to 48.2% of the country's overall water potential in 2016, 40 BCM (74%) of this was used for irrigation, 7 BCM (13%) for drinking water, and 7 BCM (13%) for industrial purposes (Table 13Table 13). By 2023, the amount of water used for irrigation is expected to fall to 64%, while the share used for industrial purposes will rise to 20%. In 2023, overall water consumption is expected to reach 112 BCM.

2.5. Waste

The increase in solid waste production has started to become one of the major environmental problems in parallel with the rapid population increase, developing industrialization and changes in the social and economic status of society, and unplanned urbanization in Türkiye.

Türkiye regardless employs several waste management practices including sanitary landfills, incineration (only for hazardous waste), sterilization, composting, and other advanced disposal methods such as pyrolysis, gasification as well as plasma. The most common method of waste disposal in the country, especially for municipal waste, is landfilling. The municipal waste is collected on a regularly scheduled basis. The metropolitan municipality and other municipalities are responsible for providing collection, transportation, separation, recycling, disposal, and storage of waste services.

Turkish Statistical Institute compiles data from all municipalities, manufacturing industry establishments having 50 or more employees, all active thermal power plants having an installed capacity of 100 MW or more, all organized industrial zone directorates having completed their infrastructures, from mining establishments, submitted production data for the reference year to General Directorate of Mining and Petroleum Affairs, from all waste disposal and recovery facilities having a license or a temporary license, and, regardless of license, to controlled landfill sites, incineration plants and composting plants operated by or on behalf of municipalities.

Medical waste data of health institutions, including in the Annex-1 of the Regulation on the Control of Medical Waste, covers universities, general purpose and maternity hospitals, and clinics that generate large amounts of waste, and was obtained from the administrative records of the Ministry of Environment, Urbanization, and Climate Change.

The amount of waste generated was calculated as 104.8 million tonnes[12] Within the scope of the research, a total of 104.8 million tonnes of waste, of which 30.9 million tonnes was hazardous, was generated in manufacturing industry establishments, mining establishments, thermal power plants,

[12] TÜİK Press Release Waste Statistics 2020, December 23, 2021

organized industrial zones (OIZ), health institutions and households, in 2020. The total amount of waste increased by 10.5% compared to 2018.

Waste generation, 2018, 2020 (Tonnes)

	Amount of total waste		Amount of hazardous waste		Amount of non-hazardous waste	
	2018	2020	2018	2020	2018	2020
Total	**94 870 818**	**104 848 864**	**15 078 573**	**30 876 658**	**79 792 245**	**73 972 206**
Manufacturing industry establishments	**22 881 144**	**23 867 866**	3 677 320	4 597 274	19 203 824	19 270 593
Thermal power plants	**26 127 134**	**24 375 356**	13 805	10 012	26 113 329	24 365 343
Mining establishments(1)	**17 387 029**	**27 581 875**	11 176 581	26 044 730	6 210 448	1 537 144
Organized industrial zones	**286 843**	**279 067**	111 733	116 720	175 110	162 347
Health institutions	**89 454**	**109 683**	86 916	106 570	2 538	3 113
Households(2)	**28 099 214**	**28 635 018**	12 218	1 352	28 086 996	28 633 665

Figures in table may not add up to totals due to rounding.
(1)Amount of waste excluding overburden.
(2)The amount of waste originated from households has been estimated by using the Municipal Waste Statistics Survey results.

Figure 6: Waste generation 2018, 2020

3. POLICY, REGULATORY AND INSTITUTIONAL FRAMEWORK FOR ENVIRONMENTAL AND SOCIAL ASSESSMENT

3.1. Administrative and Legal Framework for Environmental Protection and Conservation in Türkiye

3.1.1. Administrative Framework

The Ministry of Environment, Urbanization and Climate Change (MoEUCC) is the responsible organization for the implementation of policies adopted for the protection and conservation of the environment, and for sustainable development and management of natural resources.

The MoEUCC (central organization) is based in Ankara and it has provincial directorates in each province. The MoEUCC has an overall coordinating role for the development and implementation of environmental policies in Türkiye, including the approximation process for the EU environmental Acquis. The central organization is mainly composed of the following primary directorates and departments.

- General Directorate of European Union and Foreign Relations
- General Directorate of Environmental Management
- General Directorate of Environmental Impact Assessment, Permit and Inspection
- General Directorate of Protection of Natural Assets
- General Directorate of Local Authorities
- General Directorate of National Property
- General Directorate of Construction Affairs
- General Directorate of Infrastructure and Urban Transformation Services
- General Directorate of Vocational Services
- General Directorate of Spatial Planning
- General Directorate of Geographic Information Systems
- General Directorate of Legal Services
- General Directorate of Personnel

- General Directorate for Combating Desertification and Erosion
- Directorate of High Technics Board
- Directorate of Internal Auditing Unit
- Directorate of Strategy Development
- Directorate of Support Services
- Directorate of Training and Publication
- Directorate of Revolving Fund
- Department of Guidance and Inspection
- Office of Press and Public Relations Counsellor
- Office of Legal Counsellor

The main environmental responsibilities of the MoEUCC are summarized below:

- Prepare the legislation on the environment, public works, and housing development and monitor and audit the related implementations;
- Identify the principles and policies on environmental protection, rehabilitation of the environment, and prevention of environmental pollution, develop standards, criteria, and programs in this context; outline the principles for implementing and monitoring these standards and criteria; undertake the works related to climate change;
- Assess the impacts of all facilities/activities that pollute the environment due to their activities resulting in solid, liquid, or gaseous waste disposal/discharge into receiving environments; monitor, audit and issue the permits of such facilities/activities;
- Perform the measurements/analyses and monitoring studies concerning receiving environments; and
- Establish the plans and policies regarding global climate change and measures to be taken against its effects.

For the management of environmental issues, MoEUCC collaborates with other ministries (including their provincial organizations where relevant), government agencies and relevant stakeholders, such as; Ministry of Transport and Infrastructure (General Directorate of Highways, General Directorate of Infrastructure Investments), Ministry of Agriculture and Forestry (General Directorate of Nature Protection and National Parks, General Directorate of Water Management, General Directorate of State Hydraulic Works, General Directorate of Forestry, General Directorate of Agricultural Reform), Ministry of Culture and Tourism (General Directorate of Cultural Heritage and Museums), Ministry of Energy and Natural Resources (General Directorate of Mining and Petroleum Affairs, General Directorate of Mineral Research and Exploration, Department of Energy Efficiency and Environment), Ministry of Labor and Social Security (General Directorate of Occupational Health and Safety, General Directorate of Labor) and Ministry of Health (General Directorate of Health Services, General Directorate of Public Health).

3.1.2. Legal Framework

Turkish environmental regulations were developed in line with national and international initiatives and standards, and some of them have recently been revised to be harmonized with the EU Directives in the scope of Türkiye’s pre-accession efforts.

The Turkish Environmental Law (Law No: 2872; Date of Ratification: 1983), which came into force in 1983, addresses environmental issues on a broad scope. According to the basic principles that govern the application of the Environmental Law, and as stated in the Constitution, citizens as well as the state bear responsibility for the protection of the environment.

Complementary to the Environmental Law and its regulations, other laws also govern the protection and conservation of the environment, resources, and cultural and natural assets and also directly related to renewable energy, the prevention, and control of pollution, the implementation of measures for the prevention of pollution, health, and safety and labor issues. Some of them are:

- Conservation of Cultural and Natural Assets Law (Law No: 2863, Date of Ratification: 1983)
- Energy Efficiency Law (Law No: 5627, Date of Ratification: 2007)
- Electricity Market Law (Law No: 6446, Date of Ratification: 2013)
- Law on the Use of Renewable Energy Resources for the Production of Electrical Energy (Law No: 5346, Date of Ratification: 2005)
- Forestry Law (Law No: 6831, Date of Ratification: 1956)
- Groundwater Law (Law No: 167, Date of Ratification: 1960)
- Labor Law (Law No: 4857, Date of Ratification: 2003)
- Law on Soil Protection and Land Use (Law No: 5403; Date of Ratification 2005)
- Law on Soil Protection and Land Use (Law No: 6537; Date of Ratification 2014)
- Occupational Health and Safety Law (Law No: 6331, Date of Ratification: 2012)
- Public Health Law (Law No: 1593, Date of Ratification: 1930)
- Presidential Decree (Official Gazette date: May 10, 2019, No: 30770)
- Social Insurance and General Health Insurance Law (Law No: 5510, Date of Ratification: 2006)

3.2. National Environmental, Social, and Occupational Health and Safety Legislation and Regulatory Requirements

Infrastructure projects are subject to varying levels of review that begin while projects are in the development and pre-operation phases. Additional regulations apply to facilities once they are in operation. As part of the European Union (EU) accession process, several institutional and legislative reforms have been made by Türkiye. Because of these reforms, environmental legislation and instruments for environmental protection have been aligned with international standards. Those that pertain to construction works include but not limited to the following:

Air Quality Control and Management

- Regulation Concerning Follow-up of Greenhouse Gas Emissions, Official Gazette date: May 31, 2017, No: 30082
- Regulation on the Control of Air Pollution from Heating, Official Gazette date: February 07, 2009, No: 27134
- Regulation on the Control of Exhaust Emissions, Official Gazette date: March 11, 2017, No: 30004
- Regulation on Assessment and Management of Air Quality, Official Gazette date: June 6, 2008, No: 26898

Environmental Management, Permitting and Planning

- Environmental Auditing Regulation, Official Gazette date: June 12, 2021 and No: 31509
- Environmental Impact Assessment Regulation, Official Gazette date: July 29, 2022 and No: 31907
- Regulation for the Preparation of Spatial Plans, Official Gazette date: June 14, 2014, No: 29030
- Regulation for Starting up and Operating a Work Place, Official Gazette date: August 10, 2005, No: 25902

Noise Control and Management

- Regulation on the Environmental Noise Control, Official Gazette date: November 30, 2022, No: 32029

Soil Quality Control and Management

- Implementation Regulation on Soil Protection and Land Use, Official Gazette date: December 15, 2005, No: 26024
- Regulation on the Control of Soil Pollution and Polluted Areas by Point Sources, Official Gazette date: June 8, 2010, No: 27605

Waste Management

- Regulation of Waste Management, Official Gazette date: April 2, 2015, No: 29314
- Regulation Concerning the Landfill of Wastes, Official Gazette date: March 26, 2010, No: 27533
- Regulation on the Control of Excavation Materials, Construction, and Demolition Wastes, Official Gazette date: March 18, 2004, No: 25406
- Regulation on the Control of Medical Wastes, Official Gazette date: January 25, 2017, No: 29959
- Regulation on the Control of Packaging Wastes, Official Gazette date: June 26, 2021, No: 31523
- Regulation on the Control of Waste Batteries and Accumulators, Official Gazette date: August 31, 2004, No: 25569
- Regulation on the Control of Waste Oils, Official Gazette date: December 21, 2019, No: 26952
- Zero Waste Regulation, Official Gazette date: July 12, 2019, No: 30829
- Regulation on the Control of End of Life Tires, Official Gazette date: November 25, 2006, No: 26357

Water Quality Control and Management

- Ordinance on Groundwater Resources, Official Gazette date: August 8, 1961, No: 10875
- Regulation Concerning Protection of Ground Waters against Pollution and Deterioration, Official Gazette date: May 22, 2015, No: 29363
- Regulation Concerning Quality of Surface Waters Planned or Used as Drinking Water Supply, Official Gazette date: June 29, 2012, No: 28338
- Regulation Concerning Water for Human Consumption, Official Gazette date: March 7, 2013, No: 28580
- Regulation on the Control of Pollution Caused by Dangerous Substances in Water Environment, Official Gazette date: November 26, 2005, No: 26005
- Regulation on Pit Opening Where Sewer System Construction is not Applicable, Official Gazette date: March 19, 1971, No: 13783
- Surface Water Quality Management Regulation, Official Gazette date: April 15, 2015, No: 29327

- Urban Wastewater Treatment Regulation, Official Gazette date: January 8, 2006, No: 26047
- Regulation Concerning Wastewater Collection and Disposal Systems, Official Gazette date: January 6, 2017, No: 29940
- Water Pollution Control Regulation, Official Gazette date: December 31, 2004, No: 25687

Nature Protection

- Regulation on Pastures, Official Gazette date: July 31, 1998, No: 23419
- Regulation on the Protection of Wetlands, Official Gazette date: April 4, 2014, No: 28962
- Regulation on Procedures and Principles Concerning the Protection of Game and Wild Animals and their Habitats and Combat with their Pests, Official Gazette date: October 24, 2005, No: 25976

Health and Safety

- Communiqué on Hazard Classes List related to Occupational Health and Safety, Official Gazette date: March 29, 2013, No: 28602
- First Aid Regulation, Official Gazette date: July 29, 2015, No: 29429
- Heavy and Hazardous Works Regulation, Official Gazette date: June 16, 2004, No: 25494
- Health and Safety Measures in Working with Asbestos Regulation, Official Gazette date: January 259, 2301385, No: 2
- Health and Safety Signs Regulation, Official Gazette date: September 11, 2013, No: 28762 (based on EU Council Directive 92/58/EEC dated June 24, 1992)
- Regulation Concerning the Use of Personal Protection Equipment at Workplaces, Official Gazette date: July 2, 2013, No: 28695 (based on EU Council Directive 89/656/EEC dated November 11, 1989)
- Regulation on Health and Safety in Fixed Term and Temporary Employment, Official Gazette date August 23, 2013, No: 28744
- Regulation on Health and Safety Measures in the Use of Work Equipment, Official Gazette date: April 25, 2013, No: 28628
- Regulation on Health and Safety Measures to be taken at Works Involving Chemicals, Official Gazette date: August 12, 2013, No: 28733
- Regulation on Methods and Essentials of Work Health and Safety Training for Workers, Official Gazette date: May 15, 2013, No: 28648
- Regulation on Occupational Health and Safety, Official Gazette date: December 9, 2003, No: 25311) (based on EU Council Directive 89/391/EEC dated June 6, 1989)
- Regulation on Radiation Safety, Official Gazette date: March 24, 2000, No: 23999

Management of Chemicals and Other Dangerous Substances

- Regulation Concerning the Classification, Packaging, and Labeling of Dangerous Substances and Preparations, Official Gazette date: December 11, 2013, No: 28848, repeated
- Regulation Concerning the Material Safety Data Sheets for the Dangerous Substances and Preparations, Official Gazette date: December 3, 2014, No: 29204
- Regulation on the Inventory and Control of Chemicals, Official Gazette date: December 26, 2008, No: 27092 (repeated)

Renewable Energy

- Regulation on Unlicensed Electricity Generation in the Electricity Market, Official Gazette date May 12, 2019, No:30772 and updated on October 1, 2022, and December 31, 2022
- Regulation on Amending the Unlicensed Electricity Generation Regulation in the Electricity Marketing Official Gazette date: August 11, 2022, No: 31920
- Regulation on Solar Energy Based Electricity Generation Facilities, Official Gazette date June 16, 2011, No:27969.

General

- Regulation Concerning the Decrease of Ozone Depleting Substances, Official Gazette date: April 7, 2017, No: 30031
- Regulation Concerning the Increase of Efficiency in the Usage of Energy and Energy Resources, Official Gazette date: October 27, 2011, No: 28097
- Regulation on Energy Performance in Buildings, Official Gazette date: December 5, 2008, No: 27075
- Regulation on the Implementation of the Law Concerning Private Security Services, Official Gazette date: September 26, 2009, No: 27358

3.3. The Turkish Regulation on Environmental Impact Assessment

Under Article 10, Environmental Law sets out the general scope of the Environmental Impact Assessment (EIA) procedure in Türkiye, indicating that institutions, agencies, and establishments that lead to environmental problems as a result of their planned activities are obliged to prepare for Environmental Impact Assessment report or Project Information File (PIF). Based on this legal framework, the Regulation on Environmental Impact Assessment (henceforth "EIA Regulation") was put into force for the first time after being published in the Official Gazette numbered 21489 and dated February 7, 1993. Since then, there had been several amendments to the first regulation, and new EIA regulations were published in 2008, 2013, and 2014 repealing the former regulations in force. The latest EIA Regulation has been published in the Official Gazette dated July 29, 2022, and numbered 31907, which repealed the 2014 EIA Regulation.

The EIA Regulation is largely in line with the EU Directive on EIA. The key relevant steps of the Turkish EIA procedure namely screening public consultation, scoping, disclosure, and supervision are briefly reviewed below in the order they are prescribed to occur.

3.3.1. Screening

The EIA Regulation classifies projects into two categories:

- **Annex I projects[13].** These are projects that have significant potential impacts and require an EIA. Annex I of the EIA Regulation lists these projects types, so project proponents are expected to start the EIA procedure without any other screening process; and
- **Annex II projects[8].** Annex II of the EIA regulation covers projects that may or may not have significant effects on the environment. Proponents of Annex II projects are required to submit a Project Information File (PIF) to the MoEUCC. The PIF is prepared following the General Format for PIF provided in Annex IV of the EIA Regulation and contains information on (i) project characteristics; (ii) environmental characteristics of the project site and impact area; and (iii) significant impacts of the project and measures to be taken during construction and operation phases of the project. A non-technical summary of the above items is also to be added to the PIF. The PIF is submitted to the MoEUCC for review and evaluation. Provincial Directorate gives

[13] https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=39647&MevzuatTur=7&MevzuatTertip=5

its “EIA is Necessary” or “EIA is not necessary” decision regarding the project. The decision of the Provincial Directorate is communicated to the public using appropriate means (i.e. announcement boards, internet).

There would be no sub-projects within the scope of PUMRE Project that would be considered subject to the EIA Regulation. The social impacts within the screening are not compulsory in the national EIA regulation and generally are either very briefly mentioned or not at all.

Renewable energy projects especially in solar power plants with a project area of 20 hectares or more or an installed power of 10 MWm or more will be implemented with Environmental Impact Assessment. These projects are included in the Annex-1 of the EIA Regulation. Solar power plants with a project area of 2 hectares or more or an installed power of 1 MWm or more (excluding roof and facade systems) are included in Annex-2 (Projects subject to previous assessment for environmental impacts) of the Regulation.

3.4. National Laws on Social Impacts

Although the Turkish EIA Regulation does not entirely meet the requirements of international standards of social impact assessment, there are some legal arrangements for managing various social impacts and stakeholder engagement meetings. According to the new EIA regulation published on July 29th 2022, SEP is required to be prepared annexed to EIA Application File for Annex I activities. SEP describes the methods, tools and means to communicate and share information with the stakeholders (relevant to, affected from, affecting the project) about the project activities throughout all project stages. A formal public consultation meeting occurs for projects that are subject to an EIA after the screening / EIA Application File process and before scoping. The project proponent organizes a “public participation meeting” chaired by the relevant MoEUCC provincial director in a location that affected local groups can access easily. The invitation to the meeting is published in a national and a local newspaper at least ten days prior to the meeting. The MoEUCC may also request additional activities such as the distribution of informative brochures; conducting surveys, seminars; or information dissemination through a project dedicated website, and updating the SEP where deems necessary, throughout the EIA process. In addition to these, the following are identified to be a non-exhaustive list of the social legal framework applicable to this project:

- Labor Law (No. 4857), published in the Official Gazette no. 25134 dated 10 June 2003
- Law on Occupational Health and Safety (No. 6331), published in the Official Gazette no. 28339 dated 30 June 2012
- Regulation on Contractors and Sub-contractors, published in the Official Gazette no. 27010 dated 27 September 2008
- Laws on Right to Information (No. 4982), published in the Official Gazette no 25269 dated 24 October 2003
- Regulation on the Environmental Impact Assessment (EIA) published in the official Gazette no. 29186 dated 2525 November 2014

In terms of land acquisition and involuntary resettlement, the relevant legal arrangements of Türkiye are summarized below:

- Expropriation Law (6203), published in the Official Gazette no. 18215 dated 8 November 1983
- Amendment on Expropriation Law (4650), published in the Official Gazette no. 24393 dated 5 May 2011

3.4.1. National Laws on Labor and Working Conditions

Occupational Health and Safety

In recent years, Türkiye has undergone a reform to improve its national Occupational Health and Safety (OHS) system by adapting a set of international and regional standards into its national level requirements for the prevention of occupational risks as defined in the ILO Occupational Safety and Health Convention, 1981 (No. 155). The convention, along with the Occupational Health Services Convention, 1985 (No. 161) were both ratified by Türkiye in 2005 Türkiye is also been party to the Labor Inspection Convention, 1945 (No. 81) since 1951. In 2014, Türkiye ratified the Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187).

In 2012, a stand-alone Law on OHS (No. 6331) was put into force (20 June 2012). The OHS Law governs workplace environments and industries (both public and private) as well as virtually all classes of employees including part-time workers, interns, and apprentices. The legislation is comprehensive and is generally applicable across all sectors and many industries.

Labor and Working Conditions

Türkiye is a party to a multitude of ILO conventions, including but not limited to conventions on equal treatment of employees, gender equality, child labor, forced labor, OHS, right of association, and minimum wage. Accordingly, the current Turkish Labor Law (No.4857) is to large extent consistent with ESS2 requirements.

There are also secondary legislations that may apply to the project which include regulations on annual leave, working hours, overtime work, minimum wage, and female and child employees. The Ministry of Family Labor and Social Services has published various communique and circulars that set the ground for the implementation of the Labor Law which may also be referenced during project implementation.

3.5. International Agreements and Conventions

Turkish national policy on the protection of the environment, cultural heritage, and conservation of biological resources has been formulated based on relevant international agreements signed or ratified by Türkiye. Relevant environmental, OHS, and international labor agreements and conventions ratified by Türkiye are listed below:

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (22 June 1994)
- Bern Convention on Protection of Europe's Wildlife and Living Environment (05 January 1999)
- Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) (22 December 1996)
- Convention on Long-range Transboundary Air Pollution (18 April 1983)
- European Convention on the Protection of the Archaeological Heritage (9 March 2005)
- European Landscape Convention (10.03.2006)
- International Convention for the Protection of Birds (12 September 1967)
- Montreal Protocol on Substances that Deplete the Ozone Layer (20 December 1991)
- Paris Convention on the Protection of the World Cultural and Natural Heritage (14 April 1982)
- Ramsar Convention on Wetlands of International Importance Especially as Wildfowl Habitat (3 November 1994)
- Stockholm Convention on Persistent Organic Pollutants (14 October 2009)
- United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (31 Mar 1998)
- United Nations (UN) Framework Convention on Climate Change (Kyoto Protocol) (28 May 2009)

- UN (Rio) Convention on Biological Diversity (14 Feb 1997)
- Vienna Convention or the Protection of the Ozone Layer (20 Sep 1991)
- ILO Occupational Safety and Health Convention (23 March 2015)
- Occupational Health Services Convention (22 April 2005)
- Labor Inspection Convention (05 March 1951)
- Promotional Framework for Occupational Safety and Health Convention (16 January 2014)
- Worst Forms of Child Labor Convention (2 August 2001)

4. WORLD BANK ENVIRONMENTAL AND SOCIAL STANDARDS

The World Bank Environmental and Social Framework (ESF) sets out the World Bank's commitment to sustainable development, through a Bank Policy and a set of Environmental and Social Standards[14] (ESSs) that are designed to support Clients' projects, end extreme poverty, and promote shared prosperity.

Ten ESSs set out the requirements for Clients relating to the identification and assessment of environmental and social risks and impacts associated with projects supported by the Bank through Investment Project Financing (IPF).

The standards will:

a. support Clients in achieving good international practice relating to environmental and social sustainability;

b. assist Clients in fulfilling their national and international environmental and social obligations;

c. enhance nondiscrimination, transparency, participation, accountability, and governance;

d. enhance the sustainable development outcomes of projects through ongoing stakeholder engagement

The World Bank's Environmental and Social Standards are given briefly below.

Table 1. Brief Description of World Bank's ESSs

ESS	Topic	Brief requirement
ESS1	Assessment and Management of Environmental and Social Risks and Impacts	ESS1 sets out the Client's responsibilities for assessing, managing, and monitoring the environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs). The environmental and social assessment will be based on current information, including a description of the project and any associated aspects, and environmental and social baseline data at an appropriate level of detail sufficient to inform the characterization and identification of risks and impacts and mitigation measures. The assessment will evaluate the project's potential environmental and social risks and impacts, with particular attention to those that may fall disproportionally on disadvantaged and/or vulnerable social groups; examine project alternatives; identify ways of improving project selection, sitting, planning, design and implementation to apply the mitigation hierarchy for adverse environmental and social impacts and seek opportunities to enhance the positive impacts

[14] *www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards* and *http://projects-beta.vsemirnyjbank.org/ru/projects-operations/environmental-and-social-framework/brief/environmental-and-socialstandards*

		of the project. The environmental and social assessment will include stakeholder engagement as an integral part of the assessment, in accordance with ESS10. According to ESS1 the Client will identify, evaluate and manage the environmental and social risks and impacts of the project throughout the project life cycle in a systematic manner, proportionate to the nature and scale of the project for the environmental and social risks assessment.
ESS2	Labor and Working Conditions	The objectives of ESS2 are to (i) promote safety and health at work; (ii) promote the fair treatment, non-discrimination, and equal opportunity of project workers; (iii) protect workers including vulnerable workers such as women, persons with disabilities, children (of working age, by ESS2) and migrant workers, contracted workers, community workers, and primary supply workers, as appropriate; (iv) prevent the use of all forms of forced labor and child labor (v) support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law; and (vi) provide project workers with accessible means to raise workplace concerns. The applicability and scope of application of ESS2 depend on the environmental and social assessment described in ESS1 and the type of employment relationship between the Client and the project workers. ESS2 requirements cover; the development and implementation of a written Labor Management Procedure (LMP) which will apply to the project. These procedures will set out how project workers will be managed, under the requirements of national law and this ESS, and will include the description of the following; (i) working conditions and management of worker relationships (such as development and implementation of labor management procedures applicable to the project and Code of Conduct (CoC) that will be followed by project contractors) including terms and conditions of employment, nondiscrimination, and equal opportunity, and worker's organizations; (ii) protecting the workforce including defining a minimum age for workers, prohibition of child labor and forced labor; (iii) grievance mechanism (for the workers, including arrangements for referral to the national system for any potential Sexual Exploitation Abuse/Sexual Harassment (SEA/SH) risks; (iv) occupational health and safety; (v) contracted workers; (vi) community workers; and(vii) primary supply workers.
ESS3	Resource Efficiency, Pollution Prevention, and Management	ESS3 recognizes that economic activity and urbanization often generate pollution to air, water, and soil, and consume finite resources that may threaten people, ecosystem services, and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention and GHG emission avoidance, and mitigation technologies and practices have become more accessible and achievable. This ESS sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life cycle consistent with Good International Industry Practice

		(GIIP). Assessment of risks and impacts and proposed mitigation measures related to relevant requirements of ESS3, including raw materials, water use, air and soil pollution, hazardous materials, and hazardous and solid waste and disposal of them are included within the scope of the ESMF, and ESMPs as relevant. An example of ESMP could be found in Annex 3 of ESMF. The anticipated environmental and social risks considered in this ESMF will be further assessed and addressed in detail specified for individual project sites, in the site-specific ESMPs.
ESS4	Community Health and Safety	ESS4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities. ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Clients to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable.
ESS5	Land Acquisition Restrictions on Land Use and Involuntary Resettlement	ESS5 recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. Project-related land acquisition or restrictions on land use may cause physical displacement (relocation, loss of residential land, or loss of shelter), economic displacement (loss of land, assets, or access to assets leading to loss of income sources or other means of livelihood), or both. The term “involuntary resettlement” refers to these impacts. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in displacement.
ESS6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	The environmental and social assessment as set out in ESS1 will consider direct, indirect, and cumulative project-related impacts on habitats and the biodiversity they support. This assessment will consider threats to biodiversity, for example, habitat loss, degradation and fragmentation, invasive alien species, over-exploitation, hydrological changes, nutrient loading, pollution, and incidental take, as well as projected climate change impacts. It will determine the significance of biodiversity or habitats based on their vulnerability and irreplaceability at a global, regional, or national level and will also take into account the different values attached to biodiversity and habitats by project-affected parties and other interested parties.
ESS7	Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities	This ESS recognizes that Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities have identities and aspirations that are

		distinct from mainstream groups in national societies and often are disadvantaged by traditional models of development.
ESS8	Cultural Heritage	The Client will avoid impacts on cultural heritage. When avoidance of impacts is not possible, the Client will identify and implement measures to address impacts on cultural heritage by the mitigation hierarchy. Where appropriate, the Client will develop a Cultural Heritage Management Plan.
ESS9	Financial Intermediaries	Financial intermediaries will put in place and maintain an ESMS to identify, assess, manage, and monitor the environmental and social risks and impacts of sub-projects on an ongoing basis.
ESS10	Stakeholder Engagement and Information Disclosure	This ESS recognizes the importance of open and transparent engagement between the Client and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. The client will engage with stakeholders throughout the project life cycle, commencing such engagement as early as possible in the project development process and in a timeframe that enables meaningful consultations with stakeholders on project design. The nature, scope, and frequency of stakeholder engagement will be proportionate to the nature and scale of the project and its potential risks and impacts. Stakeholder engagement is an inclusive process conducted throughout the project life cycle. When properly designed and implemented, it supports the development of strong, constructive, and responsive relationships that are important for the successful management of a project's environmental and social risks. Stakeholder engagement is most effective when initiated at an early stage of the project development process and is an integral part of early project decisions and the assessment, management, and monitoring of the project's environmental and social risks and impacts. In consultation with the Bank, the Client will develop and implement a Stakeholder Engagement Plan (SEP) proportionate to the nature and scale of the project and its potential risks and impacts.

Consequently, seven out of the ten ESSs establish the standards that the MoEUCC and the Project will meet through the project life cycle, as follows:

ESS1: Assessment and Management of Environmental and Social Risks and Impacts

ESS2: Labor and Working Conditions

ESS3: Resource Efficiency and Pollution Prevention and Management

ESS4: Community Health and Safety

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS8 Cultural Heritage

ESS10: Stakeholder Engagement and Information Disclosure

ESS5 Land Acquisition Restrictions on Land Use and Involuntary Resettlement do not apply to this project since none of the sub-project will require involuntary land acquisition or restrictions on land use**.** Only the existing public lands will be utilized for the project activities and the subprojects with new land acquisition needs or where municipalities or other public institutions have used eminent domain to acquire land in anticipation of the project in the past five years will be excluded from project financing. A screening procedure is defined under Annex 4 for the usage of existing public lands to ensure that they are free of prior use and whether any formal/informal users will be affected as a result of investments. ESS7 “Indigenous People/Sub-Saharan African Historically Underserved Traditional Local Communities” and ESS9 “Financial Intermediaries” are not relevant to theproject components under the responsibilities of MoEUCC as there are no indigenous groups in Türkiye that meet the definition provided in ESS7 and the project does not involve any Financial Intermediary.

The sub-projects relevant to the mentioned above ESSs will be screened out through the screening criteria set out in this ESMF and will not be financed under the project. Under the ESSs, the Project will also apply the relevant requirements of the World Bank Group’s Environment, Health, and Safety (EHS) Guidelines. When the Turkish requirements differ from the levels and measures presented in the EHS Guidelines, the more stringent ones (such as the most stringent discharge and emission standards) will be applied in the project specifications. The applicable EHS Guideline for this project is the World Bank Group’s EHS General Guidelines.

The ESSs mentioned above and their potential impacts/risks and mitigation measures that will be applied to the sub-projects are given in detail in Table 3.

4.1.Comparison between Turkish Regulations and the World Bank Standards and Related Key Gaps

The Turkish EIA procedures are, with some exceptions, in line with the WB's ESSs. The primary exceptions are in project categorization, the scope of environmental and social assessment, and public consultation. In cases where the Turkish legislation differs from the ESSs, the more stringent one will be applied to the project implementation.

Project Categorization

According to the World Bank's Environmental and Social (E&S) Policy, projects are classified into one of four risk classifications: High Risk, Substantial Risk, Moderate Risk, or Low Risk considering relevant potential risks and impacts, such as the type, location, sensitivity, and scale of the project; the nature and magnitude of the potential E&S risks and impacts; the capacity and commitment of the Client; and other areas of risks that may be relevant to the delivery of E&S mitigation measures and outcomes.

No clear-cut border values are distinguishing the classification of the projects or, unlike the Turkish EIA Regulation (where projects are classified into two categories as Annex I and Annex II projects), any ready lists of project types for classification; rather projects are screened on a case-by-case basis in the environmental and social risk classification of the WB.

Scope of Environmental and Social Assessment

The scope and type of E&S assessment required as per ESS1 vary proportionate to the potential risks and impacts of the project and, in an integrated way, all relevant direct, indirect and cumulative environmental and social risks and impacts throughout the project life cycle, as per the ESSs 2-10, are assessed. Indicative outlines of ESMP are given in Annex 3.

Comparison of the indicative outline required by the WB for ESIA with the general format of a Turkish EIA indicates a number of key differences as follows:

- insufficiency of the non-technical summary (technical level of information in the non-technical summary required in the Turkish EIA may not meet WB requirements) and lack of information on the legal and institutional framework in the Turkish EIA;
- possible discrepancies about the level at which the project's environmental and social impacts, its alternatives, and identification of the mitigation measures for the impacts are discussed (such as lack of discussions on residual impacts, limited discussion on indirect and induced impacts, and lack of impact significance related evaluation);
- social impact assessment is not completely integrated into the Turkish EIA and this results in the absence of proper social baseline, identification, and assessment of the project-induced social impacts including, impacts on disadvantaged and vulnerable groups and gender-related issues;
- there are limited requirements in the Turkish EIA to cover risks and impacts related to (i) community health and safety; (ii) occupational health and safety; and (iii) labor and working conditions;
- limited emphasis on the associated facilities in the Turkish EIA.

Nevertheless, the project-specific format for Turkish EIA may require more details under some of these headings than indicated in the general format. Consequently, a case-by-case review of the Turkish EIAs is necessary to identify gaps with WB requirements.

Besides, as per the new provisions of the recently published EIA Regulation (dated July 29th, 2022) which repealed the former one (dated November 25th), some of the previous insufficiencies are resolved; at least on the paper. These can generally be listed as follows:

- Preparation of a “stakeholder engagement plan” is now an obligation in the Turkish EIA process,
- A whole new section, namely “Cumulative Environmental Impact Assessment” is included in the general format of the Turkish EIA Report.
- Additional sub-sections are included which expand the scope of impact assessment and mitigation identification regarding climate change and greenhouse gas emissions
- An “Environmental and Social Action Plan” is included as a whole new section which contains an “Environmental Monitoring Plan” and “Sustainability Plan”. The Sustainability Plan includes sub-plans, such as Zero Waste Plan, Traffic Management Plan, Greenhouse Gas Reduction Plan, and Environmental and Social Management Plan.

Monitoring will be done to overcome related key gaps. The three stakeholder meetings will be planned by PIU. The first one is the “standard” consultation meeting required under the SEP, the second one is planned before the sub-project commencement and the third one is after the completion of the installation works. The pre-installation stakeholder participation meetings will be held for all buildings but the post-installation monitoring meetings for 20% of the total ones. In both meetings, a short survey on citizen participation methods will be implemented. Based on the stakeholder participation plan prepared for citizen participation methods, separate plans will be prepared according to the types of buildings (hospitals, governorship/public buildings, universities/student dormitories) included in the sub-projects.

Public Consultation and Disclosure

According to ESS 1, stakeholder engagement is an integral part of E&S assessment and should be conducted in accordance with ESS 10. Within this scope, the MoEUCC should identify the different stakeholders (project-affected parties and other interested parties including disadvantaged or vulnerable) and develop and implement a Stakeholder Engagement Plan (SEP), in consultation with the Bank, proportionate to the nature and scale of the project and its potential risks and impacts. SEP should describe the timing and methods of engagement with stakeholders throughout the life cycle of the project, and also describe the range and timing of information to be communicated to the parties as well as the type of information to be sought from them. The MoEUCC should disclose project information to allow stakeholders to understand the risks and impacts of the project, and potential opportunities, in a timeframe that enables meaningful consultations with the stakeholders on project design.

The Turkish EIA Regulation requires “pre-scoping” public consultation only for projects requiring an EIA, and only requires the announcement of the environmental assessment together with the justification. However, ESS 10 does not specify an exact number and method of public consultation and information disclosure instead the standard requires a continuous stakeholder engagement approach through the life cycle of the project that will be decided proportionate to the nature, scale and impact magnitude of the project.

5. POTENTIAL ENVIRONMENTAL AND SOCIAL RISKS AND APPLICATION OF ESSs TO PROJECT COMPONENTS

5.1. Positive Environmental and Social Impacts

Solar energy is one of the leading sustainable and renewable energy sources without causing greenhouse gases that cause global warming and other pollutants harmful to the environment. In line with the aims of the EU Green Deal, and the World Bank's Green Growth, this project stands for green energy investment that contributes to climate change mitigation, reduces the risks from environmental pollution, promotes efficient use of resources, and contributes to Türkiye's shift to low–carbon infrastructure development.

Benefits of energy efficiency:

- Access to energy: Energy efficiency can increase the services delivered by each kilowatt of electricity and improve energy access.
- Air quality: Energy efficiency can reduce both indoor and outdoor concentrations of air pollutants.
- Asset values: Energy efficiency can increase asset values for utilities.
- Economic benefits: Cost-effective energy efficiency improvements can have positive macroeconomic impacts, boosting economic activity.
- Emissions savings: Energy efficiency reduces GHG emissions, both direct emissions from fossil fuel, and indirect emissions from electricity generation.
- Employment: Energy efficiency can induce job creation, improve productivity, and decreases employee absenteeism.
- Energy prices: Energy efficiency can lower energy prices by reducing the need to add new power generation or transmission capacity and by reducing pressure on energy resources.
- Energy savings: Energy efficiency reduces the amount of energy used to provide a service.
- Energy security: Energy efficiency can reduce the reliance on energy imports and reduce the risks of supply interruptions.
- Health and wellbeing: Energy efficiency supports physical and mental health with healthy temperatures, humidity, noise, and air quality.
- Public resources savings: Energy efficiency can enable higher disposable income by lowering energy bills and other households' costs.
- Productivity: Energy efficiency leads to productivity gains by lowering maintenance issues and optimizing processes.
- Public budgets: Energy efficiency delivers financial benefits to public budgets through increased income and decreased expenses.

Evaluation Regarding Component 4a

Identification of potential sub-projects under Component 4 Part 4a is not available at the current status. Besides, specific scope of the component is not also available due to its nature. Accordingly,

in order to manage potential environmental and social risks and impacts of the Part 4b and to define scope of application of ESSs to it; CERC Manuals (as annexes to the Project Operations Manual) will be prepared by the MoEUCC. Environmental and social management of any possible eligible crises or emergency will be performed in accordance with the Operations Manual to be prepared. Furthermore, based on positive list of activities agreed in the CERC Manual and initial E&S analysis, a CERC section will be prepared and included in the ESMF. The main aspects that the specific CERC section should include is: a) list of activities that the CERC could finance (Positive list of goods, services and works; b) Analysis of related potential Environmental and Social Risks and Impacts; c) Environmental and Social Management Procedures; and d) Institutional Arrangement for the Emergency Action Plan (EAP) Implementation.

5.2. Adverse Environmental and Social Risks and Impacts

Potential Impacts during the Construction Phase

Solar power plants (SPPs) may have some negative effects on the environment during their construction, operation, commissioning, and final disposal. But the environmental impacts of the project are temporary and of local nature. The environmental impacts identified at this stage are preliminary and will need to be further elaborated specifically (sub-project-wise) and the potential for occurrence has to be ascertained during further stages of sub-project design and implementation.

Due to the nature and magnitude of potential environmental and social risks, during project implementation, no significant adverse impacts on the natural environment and humans are expected. Impacts are likely to be easily mitigated with measures.

The potential environmental and social impacts that could be identified are:

- noise, dust, air, soil, and water pollution,
- solid/demolition waste management,
- community health and safety (including traffic management-related risks and Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) risks),
- occupational health and safety risks,
- temporary interruption of livelihoods of some workers and business owners if car parks are operated by individual businesses and/or there are small enterprises such as buffets in the parking area.
- Temporary disruption and impacts on the amenity of users and employees of the public buildings

Risks are expected to be typical during the construction of solar panels in public buildings, temporary by nature and site-specific, and can be mitigated by applying best construction practices and relevant mitigation measures.

5.2.1. Noise and Vibration

Increased noise levels (noise from mechanical machinery and equipment, vehicles, etc.) may occur during the construction works of the sub-projects. Different noise levels have been determined for different time periods in Annex-2 of the Environmental Noise Control Regulation.In line with the

applicable national legislation and World Bank's ESF, DSI consultants should fulfill requirements for noise limit values for the site-specific area for all construction sites, considering the sensitive receptors such as vulnerable people including infants, patients, and elderly people around the project sites.

The following prevention measures can be applied:

- Keep roads in good condition;
- Notify the people living in the buildings around the project site likely to be affected that work is about to start (by delivering information leaflets through letterboxes and/or by posting notices on notice boards);
- Work should be performed within regular working hours as much as possible. Where this is impossible, the persons affected should be given special notification.
- Use modern equipment wherever possible. Such equipment normally has better noise and vibration attenuation than older machines. Modern machinery also offers other benefits, such as reduced emissions, etc.

5.2.2. Air Pollution

Air Pollution may be caused by emissions from installation works, vehicles, mechanization, excavation of soil, dismantling of the old equipment and constructions (if needed), transportation of demolition/construction materials, and also during the final interior and exterior works. During the excavation of the ground, dust can be generated and it could be inhaled by workers and people living or working around.

Prevention and control measures for these emissions sources include:

- Control methods such as watering the storage space and access road,
- Use of covers for storage materials, if possible,
- Installation of dust screens, if necessary and if the neighbors are a particularly vulnerable group,
- Controlled loading and unloading of materials,
- Careful planning of routes and optimal loads.

5.2.3. Solid Waste

Throughout the project implementation, different waste streams will be generated: excavation of small amounts of soil, communal waste, construction and demolition waste (concrete, glass, plastic, etc), biodegradable waste, packaging waste, possibly hazardous waste – asbestos from roofs, paints, solvents, oils, PV panels, etc. Potential impacts may arise due to inadequate waste sorting, storage, and handling. All sub-projects will include provisions on the management of all types of waste, including the management of hazardous waste. These provisions will be in line with the Turkish legislation and WB Environmental, Health, and Safety Guidelines (EHSG). Chemicals and hazardous materials wastes are mainly from the use of new insulation materials, and fuel filling, vehicle and machinery maintenance work. Another hazardous waste such as waste oil might be generated from various construction activities, from generators and machinery, etc.

The wastes will be separately collected depending on the type, stored and disposed of through the licensed companies and in line with the national regulatory requirements. The proposed mitigation measures and the responsibility of the parties are given detailed in Table 2.

5.2.4. Water Pollution

It is not expected that the project activities will cause any significant impacts on water quality. Leakage of fuels and lubricants (fuel and lubricants) from construction activities, machinery maintenance, and improperly stored waste, can pollute the soil and may contaminate groundwater or drain into surface water bodies. Maintenance and cleaning of construction machinery and mechanisms near natural streams can lead to water pollution.

As can be seen in Table 2, to prevent and control water pollution firstly, storage or disposal of generated wastewater on the site will have to minimize. Temporary or final waste disposal near/in water streams is strictly forbidden to prevent possible adverse impacts on surface waters. Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.

5.2.5. Soil Pollution

Contamination of soil might be possible from vehicles/machines' load and exhaust. The following possible impacts referring to construction activities are following:

- Soil degradation,
- Accidental spills of fuel/chemicals,
- Inappropriate waste disposal, hazardous and non-hazardous waste, and demolition waste
- Temporary construction site and temporary storage.

Soil contamination should be avoided by preventing waste disposal and the release of hazardous materials.

Other soil protection measures include:

- Prevention of illegal waste disposal,
- Developing procedures for the prevention and remediation of spills,
- Adequate management of construction materials.

5.2.6. Hazardous Waste Management

Different types of hazardous wastes that may potentially be generated as a result of the project activities are given below:

- Waste oil (from maintenance of equipment and vehicles, transformers, etc.),
- Waste paint,
- Other hazardous waste related to operation and maintenance (O&M) activities, and
- Materials that came into contact with hazardous materials.

Waste management including hazardous wastes is detailed in Waste Management Plan in Annex 9

5.2.7. Asbestos Management

As some of the roofs of the buildings are relatively old, asbestos-containing materials could be encountered as a result of the construction/installation activities. Exposure to airborne fibers from these asbestos materials poses significant health risks including lung, kidney, and throat cancer. Therefore, the handling and disposal of asbestos-containing waste materials must comply with pertinent national regulations and WBG EHS guidelines, and be managed by authorized, skilled & experienced professionals. Provisions of asbestos management are provided in Annex 8.

5.2.8. Resources Required

As can be seen in Table 2, during the construction of the Project PV panels, water, electricity, and construction materials such as steel, concrete, iron, and wooden molds will be utilized for installation activities. Environmental-friendly PV panels will be supplied by licensed firms. Water to be used for construction activities will be brought to sites by water trucks if not available on site. Electricity to be used for construction activities will be supplied by generators (if the DSI consultant could not obtain necessary permits from the administration of the building to use the existing electrical power of the buildings). Concrete will be obtained from local licensed ready-mixed concrete plants.

5.2.9. Traffic

Construction activities may increase traffic load in and around the construction sites of sub-projects. Traffic congestion and temporary interruptions from the construction phases of the investments and could potentially cause annoyance, disruption, health and safety impacts. Poorly trained or inexperienced vehicle drivers have an increased risk of accidents with other vehicles, pedestrians, locals, and equipment. Delivery vehicles, as well as private vehicles on-site likely to cause increased frequency and severity of accidents.

Community Safety and Traffic Management Plans including traffic safety risks, accident prevention, training programs, relevant stakeholder engagement activities, and site safety awareness and access restrictions will be prepared. The proposed mitigation measures can be seen in Table 2 as a summary.

5.2.10. Occupational Health and Safety (OHS) Risks

The project activities mainly cover the construction of PV panel installation. The potential OHS risks include physical hazards such as rotating and moving equipment, noise, vibration, electrical, welding/hot work, eye hazards, site traffic, ergonomics, repetitive motion, manual handling, working environment temperature, working at height, illumination, and chemical hazards such as air quality, fire, and explosions, asbestos containing materials (ACM), corrosive, oxidizing, and reactive chemicals, and biological hazards. However, although strict national regulation is in place, the experience is that low enforcement in practice is expected. In this regard, there is a moderate risk of insufficient enforcement of the OHS measures for all sub-project activities.

DSI consultants shall meet the OH&S requirements according to the national regulations that are provided in Section 3.2 and following the World Bank General EHS Guidelines. Furthermore, the site-specific ESMP and the DSI consultant's ESMP on occupational health and safety will include specific OHS measures and the capacity-building needs to mitigate any potential risks during construction works.

As part of the OHS measures special attention will be devoted to avoiding gender-based discrimination in the workplace (including sexual harassment and bullying), with additional efforts being made by the PIU to raise awareness of these issues and provide responses if such cases occur.

In addition, the PIU environmental and social specialists will monitor the implementation of the OHS requirements during the construction activities by conducting regular site visits and monthly reporting by the supervision consultants.

5.2.10.1. Noise and Vibration Risks and Hazards

Noise is one of the most common physical hazards present in the occupational setting. Inadequate hearing protection or prolonged exposure to noise can result in either temporary or permanent hearing loss. Machinery and equipment are the most likely sources of hazardous noise in the workplace.

Vibration exposure to hand-arm vibration from equipment such as hand and power tools, or whole-body vibrations from surfaces on which the worker stands or sits. **Vibration** can cause changes in

tendons, muscles, bones, and joints, and can affect the nervous system. Collectively, these effects are known as Hand-Arm **Vibration** Syndrome (HAVS). Workers affected by HAVS commonly report attacks of whitening (blanching) of one or more fingers when exposed to cold.

5.2.10.2. Electrical Risks and Hazards

Exposed or faulty electrical devices, such as circuit breakers, panels, cables, cords, and hand tools, can pose a serious risk to workers. Overhead wires can be struck by metal devices, such as poles or ladders, and by vehicles with metal booms. Vehicles or grounded metal objects brought into proximity with overhead wires can result in arcing between the wires and the object, without actual contact.
An electrical hazard can be defined as a dangerous condition where a worker could make electrical contact with energized equipment or a conductor, and from which the person may sustain an injury from shock; and/or, there is potential for the worker to receive an arc flash burn, thermal burn, or blast injury.

5.2.10.3. Risks and Hazards of Working at Height

Height is any height (including at or below ground level) from which a fall could cause personal injury. Construction work often exposes people to risks from working at height:

- Steelworks erect the steel framework of a building.
- Scaffolders erecting or striking (taking down) a scaffold.
- Roofers clad the roof of a steel-framed building.
- Demolishing workers dismantling machinery on the roof of a building.
- Painters paint walls or ceilings or facades.

Many of these tasks may involve the use of some form of access equipment (e.g., scaffolding or ladders), and those using this equipment are usually familiar with and used to such work, which can lead to complacency. Other workers may not be used to these tasks at height and lack competence.

The main risks associated with working at height are:

- The worker fell from a height.
- An object falling from a height onto someone below.

Falls from height:

- Account for the largest percentage of annual fatalities in the workplace
- can result in:
  - Fatalities
  - Neck or spinal injury leading to permanent disability or paralysis.
  - Multiple fractures.

Falling objects can also cause severe injuries that may result in death, brain damage, paralysis, or multiple fractures.

5.2.10.4. Fire and Explosion

Fire and explosive hazards include combustible and flammable liquids and substances, and/or when hot work is performed. Fire and explosion can occur when the temperature has reached the flash point of the volatile material, and where there is sufficient vapor present in the atmosphere.

Fires and or explosions resulting from the ignition of flammable materials or gases can lead to loss of property as well as possible injury or fatalities to project workers.

5.2.10.5. Hazardous Substances

Any substances with the potential to cause harm are hazardous. They may be classed as an irritant, corrosive, toxic or health hazard depending on the danger they present. Dangerous substances can cause health issues when they come into contact with skin or eyes when they're inhaled, swallowed or injected. While it's unlikely that the employees will be injecting dangerous substances, they can enter the body's bloodstream through cuts and open wounds.

Substances can take different forms, including:

- Chemicals
- Fumes
- Dust
- Vapor
- Mist
- Nanoparticles
- Gases
- Fibers
- Germs (bacteria and viruses)

Possible side effects of exposure to hazardous substances:

- Poisoning.
- Nausea and vomiting.
- Headache.
- Skin rashes, such as dermatitis.
- Chemical burns.
- Birth defects.
- Disorders of the lung, kidney or liver.
- Nervous system disorders.

5.2.11. Community Health and Safety Risks

Since the small-scale construction activities will be carried out in existing facilities used by government employees and citizens, there may be temporary disruptions for these users along with potential risk for injuries or negative health impacts during the sub-projects' construction. Community health and safety risks are based on construction phase impacts of sub-projects, such as noise and air quality, traffic management including temporary road closures, and construction waste management. These can be minimized and managed by timing and phasing works to the extent possible, traffic planning around sub-project sites, timely dissemination of information, and collecting feedback through a grievance mechanism, as well as community safety measures that will be incorporated into the site-specific E&S instruments. Large-scale labor influx and worker accommodation are not expected. Crucial consideration shall be given to the schedule for working hours to be set in a manner to avoid any disturbance to local people, for example, coordinate working hours with regular school/hospital/university hours, provide safe entrance/exit to/from school/administrative building/ambulance during the work in the corridors, toilets, prevention, and protection measures from traffic accidents during the movements of construction machinery, etc.

Site-specific ESMPs/ESMP Checklist to be prepared under the project will include, as necessary, mitigation measures to reduce potential adverse impacts and risks to the community members as well as the staff in the buildings during construction activities before the civil works begin. Table 4 provides a generic description of the measures to be implemented.

5.2.12. Labour Management Plan

The MoEUCC will develop LMP to address ESS2 requirements, both for direct and contracted workers. Working conditions and OHS requirements in line with ESS2 will be integrated into the Project LMP, to ensure that labor risks associated with proposed investment activities are managed consistently with ESS2.

5.2.13. Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH)

SEA and SH risks are assessed as low at this stage considering the small scale of construction works, limited labor influx, and the subproject locations being the urban and semi-urban areas which are easily accessed and easy to supervise. The size of the labor force required will depend on the nature of project activities: for the installation of the PV Panel, a small-sized labor force and influx can be expected. The introduction of the new labor force to urban communities surrounding the construction sites may increase the risk of SEA/SH in these communities. A Code of Conduct included in the LMP will be used to manage these risks, along with training for all workers and the availability of a grievance mechanism.

5.2.14. Other Potential Impacts

No land acquisition will be carried out within the scope of the project. A Land Acquisition Checklist (pls. see Annex 4) is prepared for the project to screen out any activities to which ESS5 may apply (including economic displacement resulting from land taking and restrictions on land use).

During the preparation of sub-projects stakeholder identification and engagement will be carried out to understand the needs and concerns of the building occupants, including disadvantaged and vulnerable groups, and make accommodations to minimize disturbances to the extent possible.

In some public buildings, especially in hospitals, parking lots may be operated by individual businesses or there may be small enterprises such as buffets located in these parking lots. Construction/installation activities may result in a temporary disruption to their business activities and livelihoods. In order to prevent any kind of temporary disruption of business activities and livelihood losses, parking lot operators or small commercial enterprises such as buffets in this area will be assisted to operate in another location, together with the workforce of the enterprise, and assisted in moving. Otherwise, if appropriate locations cannot be allocated to these enterprises, the public building administration will notify them 3 months before the start of construction/installation that the contracts of the commercial enterprises operating in the parking area of the public buildings will not be terminated. No renewed or new contracts will be signed until construction is complete. In this case, the parking lot operators or other business owners will have 3 months' advance notice before any disruption to livelihoods. In case of any inevitable disruption of business activities and income losses, appropriate compensation measures will be applied in a manner acceptable to the Bank.

Potential Impacts during the Operational Phase of the PV panels

a) During the routine operational phase, adverse impacts on the air quality are not expected. Regular maintenance of solar panels will be carried out according to Turkish legislation.

b) Communal wastes are also expected to be generated during the operational phase, which may include recyclable wastes such as paper, glasses, packaging waste from cleaning products, etc. All these wastes shall be managed through contracting specialized licensed communal services for collection, transportation, and reuse of packaging waste, etc. As for the communal solid (non–hazardous) waste generation, the beneficiaries shall manage the waste in line with the national regulation.

In addition to those, OHS risks may arise due to the maintenance and repair of the panels. Those are considered to be typical and similar to the construction phase OHS risks and impacts.

The identified impacts will be managed at the sub-project level, while typical and recommended mitigation measures are specified in Table 2.

5.3. Overall Risk Assessment

As part of the environmental and social procedures, the Bank classifies all projects into one of four classifications: High Risk, Substantial Risk, Moderate Risk, or Low Risk. In determining the appropriate risk classification, the Bank considers relevant issues, such as the type, location, sensitivity, and scale of the project; the nature and magnitude of the potential environmental and social risks and impacts; and the capacity and commitment of the Client to manage the environmental and social risks and impacts in a manner consistent with the Environmental and Social Standards.

Other areas of risk can be also relevant for the implementation of measures, as well as for results of environmental and social impact mitigation measures, depending on specific projects and context. These can include legal and institutional framework, nature of mitigation and the proposed technology, managerial structures, and legislation, as well as considerations related to stability, conflict, or security.

The overall E&S risk rating of the proposed operation is considered Moderate. PUMRE Project Environmental Risk Rating is **"Moderate"** as the physical works will not generate irreversible adverse environmental impacts, and are expected to be temporary and reversible, moderate in magnitude and nature, and sub-project sites are not located in environmentally sensitive areas. Nor are they expected to generate serious adverse effects on human health and the environment. In general, the environmental impacts from the project are expected to be positive given that the energy will be sourced from renewable energy investments.

Social risks directly inherent in project activities are deemed as **“Moderate”**. Activities requiring involuntary land acquisition will not be eligible for financing under the project. ESMPs will cover the assessment of and mitigation measures for potential adverse environmental and social impacts listed above. OHS Plan will be prepared to reduce health and safety risks that the workers and users may encounter.The Labor Management Plans will be prepared based on the LMP for their construction activities to ensure that labor and working conditions risks are managed based on national law and ESS2. SEPs will be prepared for the sub-projects for information disclosure, engaging stakeholders and host communities in the project areas.

5.4. Mitigation of the Environmental and Social Risks and Impacts

Table 2. Mitigation Measures for Construction/Installation/Operation Works

PROJECT STAGE	POTENTIAL RISKS/ IMPACT	PROPOSED MITIGATION MEASURES	RESPONSIBILITY
Preparatory activities for installing PV panels at public buildings	***a) OH&S issues*** Possible adverse safety and health impacts to the workers, local population, and employees due to: - Possible injury to employees resulting from such as working at height, working with hazardous material, electrical appliances, etc. - Non-compliance with national occupational health and safety at work. - Forced Labor and child labor risks related to the solar panel procurement	• The local construction and environment inspectorates and communities have been notified of upcoming activities. • The public will be notified of the works through an appropriate notification in the media through stakeholder engagement, and/or at publicly accessible sites (including the site of the works) • All legally required permits will be acquired for construction and/or rehabilitation. • The regular site inspection will be conducted by PIU and Supervision consultant to monitor and ensure that all construction activities to be implemented have been carried out in line with national law and regulations and requirements of WB's standards • The consultants will receive two written commitments/declarations from the PV panel suppliers that no child labor or forced labor is involved. The procurement process will include those declarations; Forced Labor Performance Declaration (which covers past performance) and Forced Labor Declaration (which covers future commitments to prevent, monitor and report on any forced labor, cascading the requirements to their sub-contractors and suppliers) • There will be a strengthened contract clause on Forced Labor on the DSI Consultant contract	• PIU • Supervision Consultant/PDoEUCC
		• Preparation of an occupational health and safety management plan • If public building entrances (e.g. schools, hospitals, etc.) will be diverted to other entrances of the building during the installation works, it will be ensured that appropriate structures will be established for disabled users. • National and international standards should be used for fire safety precautions.	• Feasibility Study Consultant
		• Before the construction/installation works start, a Risk Assessment study will be implemented for all works to be carried out. Relevant procedures and plans: Health and Safety Plans (Health and Safety	• DSI Consultant

PROJECT STAGE	POTENTIAL RISKS/ IMPACT	PROPOSED MITIGATION MEASURES	RESPONSIBILITY
		Plans will be prepared by Feasibility consultants and will be enhanced by DSI consultants by adding site-specific risk assessments, procedures, instructions, etc.) which will include risk assessment, procedures on safety, training, monitoring, incident investigation and reporting, Emergency Plans, with relevant procedures such as Asbestos Containing Structures Removal Procedure (including. Requirements and Measures When Handling Asbestos that is provided in Annex 8) will be put in place. • Appropriate signposting of the sites will inform workers of key rules and regulations to follow. • Occupational Health and Safety (OHS) trainings and toolbox talks will be provided to the employees indicating the possible risks regarding the work site and the works to be carried out. • The DSI Consultant formally agrees that all work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and the environment. • The DSI Consultant assigns a staff/specialist/expert with relevant certification and experience in charge of occupational health and safety. • The DSI Consultant will ensure a safe working environment for the workers and before construction activities will supply appropriate personal protective equipment (PPE) in line with international best practice and Turkish Legislation (always hardhats, as needed masks and safety glasses, harnesses and safety boots, etc.) • All activities will be implemented in line with both Law on Occupational Health and Safety (Official Gazette No.28339, dated June 30, 2012) and its relevant regulations and also with the World Bank Group EHS Guidelines. • The public will be informed about the work to be carried out, including the measures taken regarding Covid-19, using appropriate communication tools and methods (e.g., online/virtual and/or physically) in areas accessible to all stakeholders (including work sites). • In case of any epidemic or pandemic / communicable disease, including COVID-19, the guidance, guidelines, and recommendations to be provided by the Ministry of Health, the Ministry of Family, Labour and Social Services, and the World Health Organization will be followed, and all relevant measures will be taken for both employees and workplaces in terms of occupational health and safety. In addition, all	

PROJECT STAGE	POTENTIAL RISKS/ IMPACT	PROPOSED MITIGATION MEASURES	RESPONSIBILITY
		construction works will follow the World Bank guidelines to minimize the risk of COVID-19 transmission during the execution of civil works. • The DSI consultant notifies MoEUCC immediately in case of any significant event occurs. MoEUCC will notify the World Bank about any significant incident (accidents, spills, fatalities, etc.) in 2 days (48 hours) and will send an incident investigation report together with the corrective action plan in 30 business days to the World Bank.	
Construction/Installation works of PV panels at public buildings	***b) OH&S issues*** Possible adverse health impacts to the workers, facility users, children, and general public as a result of emissions of asbestos fibers and dust during the removal of asbestos sheets, their transport, and final disposal	• The DSI Consultant notifies MoEUCC immediately in case of any significant event occurs. MoEUCC will notify the World Bank about any significant incident (accidents, spills, fatalities, etc.) in 2 days (48 hours), and will send an incident investigation report together with the corrective action plan in 30 business days to the World Bank. • The regular site inspection will be conducted by PIU and Supervision consultant/PDoEUCC (if appropriate) to monitor and ensure that all construction activities to be implemented have been carried out in line with national law and regulations and requirements of WB's standards	• PIU
		• The project site must be lit during the night. • The surrounding area should be kept clean, without waste disposed of there. The waste needs to be collected and removed from the construction site. • The eventually broken glass should be cleaned immediately. • Following safety guidelines for the storage, transport, and distribution of hazardous materials aiming to minimize the potential for misuse, spills, and accidental human exposure. • Regular maintenance of vehicles to minimize potentially serious accidents caused by equipment malfunction or premature failure. • Both training and incidents (fatalities, lost time incidents, any significant events including spills, fire, etc.) will be recorded. • The DSI consultant notifies MoEUCC immediately in case of any significant event occurs. MoEUCC will notify the World Bank about any significant incident (accidents, spills, fatalities, etc.) in 2 days (48 hours), and will send an incident investigation report together with the corrective action plan in 30 business days to the World Bank.	• DSI Consultants

PROJECT STAGE	POTENTIAL RISKS/ IMPACT	PROPOSED MITIGATION MEASURES	RESPONSIBILITY
Construction/Installation works of PV panels at public buildings	***c) Waste management*** Possible adverse environmental impact and health effects could occur due to inappropriate waste management with various waste streams (the improper waste management could generate direct and indirect pollution on waters, and soil and will impact the air quality)	• PIU will review and send site-specific Environmental and Social Management Plans for rooftop and ESMP Checklist most probably for car parks to WB for final approval and publish the final version of plans on the Project's website. • PIU and supervision consultant/PDoEUCC (if appropriate) will monitor implementations of E&S mitigation measures through site audits. • The regular site inspection will be conducted by PIU and Supervision consultant/PDoEUCC to monitor and ensure that all construction activities to be implemented have been carried out in line with national law and regulations and requirements of WB's ESF.	• PIU • Supervision consultant/PoDEUCC
		• Waste collection and disposal pathways and sites will be identified in site-specific Waste Management Plans for all major waste types expected from installation activities. • Daily visual construction site audits will be conducted by supervision consultants/PDoEUCC (if appropriate) to monitor the implementation of mitigation measures • PIU and supervision consultant/PDoEUCC will monitor implementations of E&S mitigation measures through site audits.	• PIU • Supervision consultant/PDoEUCC
		• Waste Management Plan (Annex 9) will be prepared by the DSI consultant • Minimize storage or disposal of generated waste on the site; • Mineral construction wastes will be separated from general refuse, organic, liquid, and chemical wastes by on-site sorting and stored in appropriate containers. • Construction waste will be collected and disposed of properly by licensed collectors. • The records of waste disposal will be maintained as proof of proper management as designed. • Whenever feasible the DSI Consultant will reuse and recycle appropriate and viable materials (except asbestos) • If asbestos is located on the rooftop of the buildings, it shall be marked clearly as a hazardous material.	• DSI Consultants

PROJECT STAGE	POTENTIAL RISKS/ IMPACT	PROPOSED MITIGATION MEASURES	RESPONSIBILITY
		• When possible, the asbestos will be appropriately contained and sealed to minimize exposure. • The asbestos before removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust. • Asbestos will be handled and disposed of by authorized, skilled & experienced professionals (Annex 8. Requirements and Measures When Handling Asbestos) • If asbestos material is being stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately. Security measures will be taken against unauthorized removal from the site. • The removed asbestos will not be reused and will be disposed of according to national regulations and will be sent to licensed facilities. Necessary documentation for the transport of the material and its disposal will be kept at the construction site and will be presented to MoEUCC and WB if requested. • Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties, and handling information • The containers of hazardous substances shall be placed in a leak-proof container to prevent spillage and leaching • The wastes shall be transported by specially licensed carriers and disposed of in a licensed facility. • Paints with toxic ingredients or solvents or lead-based paints will not be used	
Construction/Installation works of PV panels at public buildings	***d) Pollution Prevention*** Construction/Installation activities may result in pollution at construction sites.	• Site-specific Pollution Prevention Plans will be prepared under ESMPs, as needed by Feasibility Consultant • The regular site inspection will be conducted by PIU and Supervision consultant/PDoEUCC to monitor and ensure that all construction/installation activities to be implemented have been carried out in line with national law and regulations and requirements of WB's ESF.	• PIU • Feasibility Study Consultant • Supervision consultant/PDoEUCC

PROJECT STAGE	POTENTIAL RISKS/ IMPACT	PROPOSED MITIGATION MEASURES	RESPONSIBILITY
		• Proper waste management will be applied to the construction sites by a DSI consultant. • Ambient air pollution related to dust generation will be controlled by implementing mitigation measures provided in ***the "F Air quality"*** section of this mitigation measures table. • Hazardous material will be secured in a designated storage area to prevent spillage and tip-over. • Semi-used chemical-containing containers will have lids and lids will be tightened while there are not in use. • Residual (left out) concrete in concrete mixers will not be allowed to wash out into the construction site, vicinity, or access roads of construction sites. Related training will be provided to drivers of concrete mixers. • In case of a spill of any hazardous material or hazardous wastes, spill prevention methods will be put in place in order to limit the exposure area. • Spill kits will be in place at appropriate points in construction sites. • In case of any spill, workers are determined to intervene in such incidents and trainings are provided on emergency response to the spills. • Training records will be kept on construction sites.	• DSI consultants
		•	•
Construction/Installation works of PV panels at public buildings	***e) Noise*** The presence of workers on the site and construction/installation works, movement of the vehicle, etc. will increase the noise and vibration level	• Site-specific ESMP/ESMP Checklist including detailed mitigation measures for noise to be generated from construction/installation activities will be prepared by feasibility study consultants and approved by PIU. • The regular site inspection will be conducted by PIU and Supervision consultant/PDoEUCC to monitor and ensure that all construction activities to be implemented have been carried out in line with national law and regulations and requirements of WB's ESF.	• PIU • Feasibility Study Consultants • Supervision Consultant/PoDEUCC

PROJECT STAGE	POTENTIAL RISKS/ IMPACT	PROPOSED MITIGATION MEASURES	RESPONSIBILITY
		• Noise during construction/installation will be limited to restricted times agreed to in the permit. • Principles of preventing adverse noise impact during construction/installation of PV panels will be provided ESMP/ESMP Checklist prepared by feasibility study consultant and approved by PIU • During operations, the engine covers of generators, air compressors, and other powered mechanical equipment shall be closed, and equipment placed as far away from residential areas as possible.	• PIU • Feasibility Study Consultant • DSI Consultants
Construction/installation works of PV panels at public buildings	***f) Air quality*** The installation and construction activities will initiate emissions from the mobile sources (vehicles and construction machinery and dismantling activities)	• Construction debris shall be kept in a controlled area and sprayed with water mist to reduce debris dust • Principles for preventing air quality problems during the demolishing activities will be provided in ESMP/ESMP Checklist prepared by the feasibility study consultant and approved by PIU • In case of pneumatic drilling during excavation, dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at the site • The surrounding environment (sidewalks, roads) shall be kept free of debris to minimize dust • There will be no open burning of construction/waste material at the site • There will be no excessive idling of construction vehicles at sites • Health & Safety and Environmental measures of construction/installation of public buildings will be detailed in site-specific Health and Safety Plans prepared by feasibility study consultants.	• PIU • Feasibility Study Consultant • DSI Consultants
Construction/Installation works of PV panels at public buildings	***g) Water quality*** Generated wastewater/waste on the construction/installation site may affect nearby streams and rivers	• The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and/or silt fences to prevent sediment from moving off-site and causing excessive turbidity in nearby streams and rivers. • Minimize storage or disposal of generated wastewater on the site; • Temporary or final waste disposal near/in water streams is strictly forbidden to prevent possible adverse impacts on surface waters • Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.	• Supervision Consultants/PDoEUCC • DSI Consultants

PROJECT STAGE	POTENTIAL RISKS/ IMPACT	PROPOSED MITIGATION MEASURES	RESPONSIBILITY
Construction/Installation works of PV panels at public buildings	***h) Resource Required***	• Water to be used for construction activities will be brought to the construction sites by water tanks if not available on site or the DSI consultant could not obtain necessary permits from administrations of buildings to use water from the water systems of the buildings • Environmental friendly PV panels will be supplied by licensed firms • Concrete will be obtained from local licensed ready-mixed concrete plants. • Electricity to be used for construction activities will be supplied by generators (if the DSI consultant could not obtain necessary permits from the administrations of the building to use the existing electrical power of the buildings) • Records of consumption of electricity, fuel (for generators), and water to be used for construction activities will be kept in construction sites.	• DSI Consultants
Construction/Installation works of PV panels at public buildings	***i) Temporary disruption to business activities and livelihoods*** If small businesses are operating within the car parks area such as a buffet or individual parking lot operators, they may be temporarily shut down during the construction/installation of PV panels	• In some public buildings, especially in hospitals, parking lots may be operated by individual businesses or there may be small enterprises such as buffets operating in this parking area. Construction/installation activities may result in a temporary disruption to their business activities and livelihoods. To prevent any kind of temporary disruption of business activities and livelihood losses, parking lot operators or small commercial enterprises such as buffets in this area will be assisted to operate in another location, together with the workforce of the enterprise, and assisted in moving. Otherwise, if appropriate locations cannot be allocated to these enterprises, the public building administration will be notified 3 months before the start of construction/installation that the contracts of the commercial enterprises operating in the parking area of the public buildings will not be terminated. No renewed or new contracts will be signed until construction is complete. In this case, the parking lot operators or other business owners will have 3 months' advance notice before any disruption to livelihoods. In case of any inevitable disruption of business activities and income losses, appropriate compensation measures will be applied in a manner acceptable to the Bank.	• PIU
Construction/Installation works of PV panels at public buildings	***a) Temporary disruption to the local community (including users and employees of these***	• The regular site inspection will be conducted by PIU and Supervision consultant/PDoEUCC to monitor and ensure that all construction activities to be implemented have been carried out in line with national law and regulations and requirements of WB's standards	• PIU • Supervision consultant/PDoEUCC

PROJECT STAGE	POTENTIAL RISKS/ IMPACT	PROPOSED MITIGATION MEASURES	RESPONSIBILITY
	facilities) during demolishing/installation of panels	• Early liaison and effective communication will be carried out with people who may be affected by the works of the DSI consultant. • Implementation of a program of ongoing liaison and respect for the local environment and residences will be formed. • The DSI consultant will appoint a dedicated person(s) accountable for community liaison who will be focused on engaging with the community to provide the appropriate information and to be the first line of response to resolve issues of concern. • The names and contact telephone numbers and email addresses of all site personnel with responsibilities for both supervision and management of the works will be displayed on the site hoarding. • Once planning consent has been obtained, formal contact will be established with the university administration and those who could potentially be affected by the construction/installation of panels will be informed via the university administration. This will include consultation of an ESMP or ESMP Checklist prepared by a feasibility study consultant and approved by PIU and include identifying any particularly sensitive times of the day. • Outside normal working hours, site security will act as the main point of contact via a dedicated phone number. Security will alert the person(s) accountable for neighborhood liaison if necessary (available 24 hours) • All workers will sign/commit to and be trained on the Code of Conduct included in this ESMF to manage the potential adverse impacts on social cohesion and Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) risks. • Any complaints will be logged, fully investigated, and responded to quickly, advising what action has been taken. Complaints will be registered and reported to PIU. • Public notice boards will be established at site entrances providing contact details of the person(s) accountable for neighborhood liaison including environmental matters. • Details of early liaison and effective communication methods with the local community will be provided in Community Safety and Traffic Management Plan.	• Feasibility Study Consultant • Supervsision Consultant • DSI Consultant

PROJECT STAGE	POTENTIAL RISKS/ IMPACT	PROPOSED MITIGATION MEASURES	RESPONSIBILITY
		• DSI consultant and supervision consultant will report any serious incident on community health and safety (such as traffic accidents caused by construction trucks or grievances related to SEA/SH) to the PIU immediately.	
Construction/Installation works of PV panels at public buildings	***b) Impact on local traffic load and pedestrian safety***	• The regular site inspection will be conducted by PIU and Supervision consultant/PDoEUCC to monitor and ensure that all construction activities to be implemented have been carried out in line with national law and regulations and requirements of WB's standards • PIU will review and approve site-specific Community Safety and Traffic Management Plan	• PIU • Supervision consultant/PDoEUCC • DSI Consultant
		• A DSI consultant will prepare Community Safety and Traffic Management Plans. The Traffic Management Plans and specifically any traffic diversions should take into account the needs of disabled persons.	• DSI Consultant
		(a) In compliance with national regulations and the WB ESF, the DSI consultant will ensure that the construction site is properly secured, and construction-related traffic regulated. This includes but is not limited to: • Signposting, warning signs, barriers, and traffic diversions: the site will be visible, and the public warned of all potential hazards • Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. • Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement Active traffic management by trained and visible staff at the site, if required for a safe and convenient passage for the public.	• DSI Consultants

PROJECT STAGE	POTENTIAL RISKS/ IMPACT	PROPOSED MITIGATION MEASURES	RESPONSIBILITY
Operational phase impacts and risks	***c) Waste management*** Possible adverse environmental impacts and health effects could occur due to inappropriate waste management with various waste streams (improper waste management could generate direct and indirect pollution on waters, soil, etc.	(a) The waste streams will be separately collected and stored and disposed of through the licensed companies and in line with the national regulatory requirements	• Respective beneficiary public institutions and universities
	d) OHS risks Maintenance and repair activities for the proper building operations may result in OHS risks to the workers	(b) The associated OHS risks will be mitigated through the provisions set out in national regulations. (c) Regular preventive and maintenance measures for the building's proper operation (regular checks and maintenance of the roof, windows, doors, any leakages, etc.) (d) Keeping records of the Main Design Project and relevant project documentation for easy maintenance and replacements of any parts of the building.	• Respective beneficiary public institutions and universities

5.5. Application of the ESSs to Sub-Projects

Table 3. Potential Impacts/Risks of sub-projects and Mitigation Measures

ESSs	Potential Impacts/Risks	Mitigations to address the potential Impacts/Risks
ESS 1: Assessment and Management of E&S Risks and Impacts	The construction/installation activities are expected to generate typical construction-associated impacts such as construction waste generation and disposal due to demolition, handling, and disposal of asbestos waste where relevant, other hazardous waste generation dust formation, impacts on air quality, and noise, as well as occupational health and safety and community health and safety adverse impacts. Installation activities are not expected to have any large-scale, significant, or irreversible negative impacts, and there will be no land acquisition. Physical displacement is not expected. Large labor influx to project sites is also not expected and the Sexual Exploitation Abuse/Sexual Harassment (SEA)/SH risk is assessed as low	Within the scope of the project, the feasibility study consultants to be hired by PIU will prepare a full Environmental and Social Management Plan (ESMP) or ESMP Checklist for each sub-project, depending on the status of environmental and social impact, as well as OHS Plan if the study is feasible for the investment. ESMP will be prepared for rooftop solar PV panels and ESMP Checklist for car parks or ground mounted. But after preparing ESMP Checklist, in case of need, ESMP can be prepared The concept and format of the ESMP Checklist, ESMP, and OHS Plan are provided in Annex 2, 3, and 12 respectively. Sub-management plans such as Waste Management Plan (WMP), Pollution Prevention Plan (PPP), and Community Safety and Traffic Management Plan (CSTMP) will also be integrated into sub-project specific ESMPs or ESMP Checklists. Formats of these sub-management plans are provided in, Annex 9, Annex 11, Annex 12, and Annex 13 respectively. This ESMP or ESMP Checklist and OHS Plan will be an integral part of the works contract for each public building. Any building registered as a cultural asset will not be eligible for this project. However, if a historical artifact is found by chance, the act will be taken according to the relevant laws and regulations in force. In such cases, necessary permits from the Ministry of Culture and Tourism and other relevant government authorities would need to be secured. The chance Find Procedure of the project will be applicable in case of such a situation occurs (see Annex 10). The project will implement Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) mitigation measures including a Code of Conduct for workers, a mechanism to report SEA/SH cases, and training and awareness sessions for project workers and affected communities. The project will not finance any sub-projects categorized as High or Substantial environmental and social risk such as sub-projects that may require any involuntary land acquisition and physical displacement and those that may have impacts on sensitive receptors such as schools, hospitals, urban settings with tight space, heavy traffic, and high population. This ESMF provides a screening mechanism to ensure such activities are screened out. In some public buildings, especially in hospitals, parking lots may be operated by individual businesses or there may be small enterprises such as buffets operating in

		this parking area. Construction/installation activities may result in a temporary disruption to their business activities and livelihoods. To prevent any kind of temporary disruption of business activities and livelihood losses, parking lot operators or small commercial enterprises such as buffets in this area will be assisted to operate in another location, together with the workforce of the enterprise, and assisted in moving. Otherwise, if appropriate locations cannot be allocated to these enterprises, the public building administration will be notified 3 months before the start of construction/installation that the contracts of the commercial enterprises operating in the parking area of the public buildings will not be terminated. No renewed or new contracts will be signed until construction is complete. In this case, the parking lot operators or other business owners will have 3 months' advance notice before any disruption to livelihoods. In case of any inevitable disruption of business activities and income losses, appropriate compensation measures will be applied in a manner acceptable to the Bank. The PIU, with the support of feasibility study consultants, will oversee the preparation of the site-specific ESMPs/ESMP Checklist and OHS Plan. The sub-project-specific ESMPs/ESMP Checklist and OHS Plan will be a part of the bidding documents and subsequently become part of the construction contract. The awarded DSI consultant will be responsible for the implementation of the ESMPs/ESMP Checklist, OHS Plan, and LMPs, Site-specific LMPs will be prepared by the DSI consultant also. PIU will be responsible for the review and approval of all documents and the quality of each of the ESMP/ESMP Checklits, OHS Plan and DSI Consultant's LMP, and overall SEP implementation. PIU will also be responsible for closely monitoring the effective implementation of the site-specific ESA documents and reporting the status of implementation to the Bank, as agreed in the Environmental and Social Commitment Plan (ESCP). Since the construction activities will be carried out in existing facilities used by government employees and citizens/students, there can be temporary disruptions for these users. These will be minimized and managed by timing and phasing works to the extent possible, traffic planning around sub-project sites, timely dissemination of information, collecting feedback through a grievance mechanism, and a proactive stakeholder engagement campaign to raise public awareness about PV panels and energy efficiency among women and men, as well as community safety measures identified (such as phased work schedule and traffic planning) to meet the requirements of ESS4 incorporated into the site-specific ESMPs/ESMP Checklist. During stakeholder identification and engagement, potentially disadvantaged and vulnerable groups (such as persons with disabilities) will be identified to ensure that community health and safety measures take into account their needs during potential disruptions. This information dissemination, stakeholder identification, and engagement and grievance mechanism principles and activities will be outlined in the project level Stakeholder Engagement Plan (SEP) to be prepared by PIU and the sub-project common SEPs to be prepared by Feasibility Consultant.

ESS 2: Labor and Workers' Conditions	Project workers include direct workers and contracted workers. MoEUCC would hire consultants to prepare structural studies, detailed energy audits, detailed designs, and technical specifications as direct workers; and hire PV installation works consultants and construction supervisors as contracted workers. As construction materials (e.g. solar panels), goods, and services are to be procured from external suppliers, primary supply workers will be engaged Community workers will not be engaged in the project. MoEUCC staff who will be engaged in the project activities are civil servants and they will remain subject to the terms and conditions of their public sector employment. Only ESS2 provisions on OHS and prohibition of child and forced labor shall apply to civil servants engaged under the project. Since the number and location of sub-projects are not known at this time, it is not possible to estimate the number of workers that will be employed under the project. Given that sub-project sites will be existing government/university buildings, most likely located in urban areas, no large-scale labor influx or worker accommodation is expected. The SEA/SH risk is assessed as Low as the project activities are expected to include small-scale construction works with a limited workforce and will be located in urban and semi-urban areas which are easily accessed and easy to supervise. National laws in Türkiye prohibit sexual harassment and civil servants' codes include the prohibition of harassmentTürkiye is a party to a multitude of International Labor Organization (ILO) conventions, which is in line with ESS2 requirements. National Labor Law includes provisions on non-discrimination, freedom of association,	PUMRE Project's LMP is developed to address ESS2 requirements, both for direct and contracted workers, as well as primary supply workers. DSI Consultants are required to monitor its primary supply chain for safety issues related to supply chain workers, and where necessary to introduce procedures and mitigation measures. The LMP will guide the preparation of site-specific DSI Consultant's Labor Management Procedures (Consultant's LMPs). For Occupational Health and Safety (OHS), Türkiye has undergone a reform in recent years to improve its national OHS system by adapting a set of international and regional standards into its national-level requirements. In addition to ILO ratification, Türkiye also passed Law No. 6331 on Occupational Health and Safety in 2012. The OHS Law governs workplace environments and industries (both public and private) as well as all classes of employees including part-time workers, interns, and apprentices. The legislation is comprehensive and is generally applicable across all sectors and many industries. The Ministry of Labor and Social Security has a Labor Inspectorate that enforces the law and conducts regular OHS and labor audits. The DSI consultant shall be subject to national OHS legislation and requirements of ESS2. MoEUCC will include provisions in line with the World Bank Group Environment, Health, and Safety (EHS) Guidelines in its bidding documents for DSI consultants, including OHS criteria for bid selection. MoEUCC will also ensure that the sub-project DSI consultant develops Occupational Health and Safety Plans, which will include risk assessment, procedures on safety, training, monitoring, incident investigation and reporting. The Bank will also review the above OHS Plans and advice on related gap-filling measures that might be required to ensure the effective implementation of these plans. DSI consultants will be contractually required to monitor and enforce safety plans. Potential risks related to COVID-19 to workers at construction sites shall be mitigated by implementing the latest COVID-19 protection guidelines and best practices.

	minimum employment age, child and forced labor, occupational health and safety, and dispute resolution. Risks related to child/forced labor are not foreseen.	
ESS 3: Resource Efficiency and Pollution Prevention and Management	The anticipated project activities will include the installation activities of PV panels in public buildings. Potential negative impacts associated with these activities could be attributed to dust and noise emissions, generation of construction waste, wastewater generation, and, hazardous materials and waste (oil, grease, old appliances, asbestos-containing materials, lead-based paint, and potentially asbestos)	The construction/installation impacts are considered to be temporary and reversible through the use of national regulatory requirements and the application of the WB group EHS general and sector-specific guidelines and other good international industry practices. In this respect, this ESMF addresses i) establishing and adhering to general good housekeeping, ii) emissions (including dust, noise, etc.) control, and iii) proper waste management including hazardous, solid, and construction waste management. Measures to ensure resource efficiency (water, energy, and construction material) are also included in the ESMF and will be further detailed in the respective ESMPs/ESMP Checklist as well as in Waste Management Plans, Pollution Prevention Plans, as needed, to be prepared for specific sub-project sites.
ESS 4: Community Health and Safety	Community health and safety risks are related to the construction/installation phase impacts of sub-projects, such as noise and air quality, traffic management and temporary road closures, and construction waste management process cycle. Large-scale labor influx and worker accommodation are not expected.	The sub-project-specific common SEPs will identify stakeholders. This ESMF also identified likely impacts of construction on community health and safety, as well as mitigation measures, monitoring, and reporting requirements. Site-specific ESMPs/ESMP Checklist and OHS Plan will include measures addressing disturbance of the community members as well as the staff in the buildings in addition to traffic management measures/plans that will cover management of traffic safety risks, accident prevention, training programs, relevant stakeholder engagement activities and site safety awareness and access restrictions, depending on the level of risk. During stakeholder identification and engagement, potentially disadvantaged and vulnerable groups (such as persons with disabilities or persons with limited mobility) will be identified to ensure that community health and safety measures take into account their needs during potential disruptions. The design of the new buildings and buildings renovation should include universal access, where technically and economically viable. In addition, the design should include adequate life and fire safety measures. The DSI consultant will be required to appoint a focal person who will keep local communities informed of the project implementation schedule, expected impacts, and other issues of interest to them. At this stage, security forces are not foreseen to be utilized within the Project, but usage of security forces will be reassessed later in sub-project specific ESMPs/ESMP Checklist. The DSI consultant will be required to implement the Code of Conduct (CoC) and train its employees on the prohibition of SEA/SH. As a part of stakeholder engagement activities, communities will be made aware of the project CoC and channels where they can report SEA/SH cases.
ESS 5: Land Acquisition, Restrictions on	All small civil works associated with this project will be carried out within the footprint of existing public buildings. There will be no land acquisition nor restriction of	A sample of a Land Acquisition Screening Checklist (Annex 4) is attached to this ESMF to screen out any activities that may fall into the scope of ESS5. A screening procedure is defined in Annex 4 for the usage of existing public lands to ensure that

Land Use, and Involuntary Resettlement	access to services nor any livelihood impacts stemming from land acquisition.	they are free of prior use and whether any formal/informal users will be affected as a result of investments.
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Potential damage to biodiversity and habitats may come from soil removal, clearance of vegetation, soil compaction due to machinery and heavy vehicles, water pollution, and disturbance of surface water bodies. The project will not entail any physical investments nor civil works which could cause adverse impacts on biodiversity, living natural resources, and sensitive areas, as it includes works in the already existing public buildings footprint within urban and peri-urban areas.	The sub-projects that would result in adverse impacts on natural or critical habitats as per the standard will not be eligible for financing. This is ensured through the screening (Annex 1 - 2) procedure set out in this ESMF. The site-specific ESMPs will include an analysis of flora & fauna species, and habitats, and identify any potential biodiversity impacts. If any of the proposed sub-projects may generate significant impacts, they will not be eligible for financing.
ESS 8: Cultural Heritage	The expected civil works will be conducted within already existing buildings. None of the government/university buildings selected for installation of PV panels under this project is registered as cultural heritage/cultural assets in the property inventory. However, there is a potential risk that during construction activities some sort of artifacts might be found by chance. If any cultural heritage object is to be identified on the site, this issue will be considered during the preparation of ESMPs or ESMP Checklists.	In such cases, the Chance Find Procedure (Annex 10) will be applied which is included in this ESMP/ESMP Checklist.
ESS 10: Stakeholder Engagement and Information Disclosure	Directly impacted stakeholders are identified as students and workers/users of universities, public sector workers/employees, and users of services located in central government buildings, as well as residents and business owners residing or operating close to these government buildings. Additionally, civil society organizations working on solar systems, community leaders, local government representatives, and those residing or working in the sub-project areas are also considered stakeholders	The SEP will cover different modalities for engagement with different stakeholders, including disadvantaged and vulnerable stakeholders (such as people with disabilities, and people with limited mobility). MoEUCC will prepare a SEP to meet the requirements of ESS10 and to ensure engagement with identified stakeholders throughout the project and use the project as an opportunity to proactively raise awareness and provide training on solar energy systems to the general public and MoEUCC staff. MoEUCC will establish a project-level grievance system for PUMRE, which receives grievances at four levels – at the DSI Consultant level, the supervision consultant level, the regional office level (through Provincial Directorates), and the PIU level. Given that the PUMRE project has newly started its implementation and civil works/installation works have not started yet, the GM is not functional yet in receiving or responding to any inquiries or grievances. The PUMREP GM procedure is designed to effectively resolve and manage grievances.

	(other interested parties). Additional stakeholders, including any vulnerable and disadvantaged groups, will be identified and mapped during the project preparation phase.	

6. IMPLEMENTATION ARRANGEMENTS PROCEDURES FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT AND RESPONSIBILITIES AND REPORTING

6.1. Implementation Arrangements

6.1.1. Institutional Framework

The project will be implemented by MoEUCC through its GDCA. The Directorate has qualified technical staff who have experience in managing design, construction, and retrofitting contracts (see Figure 3)

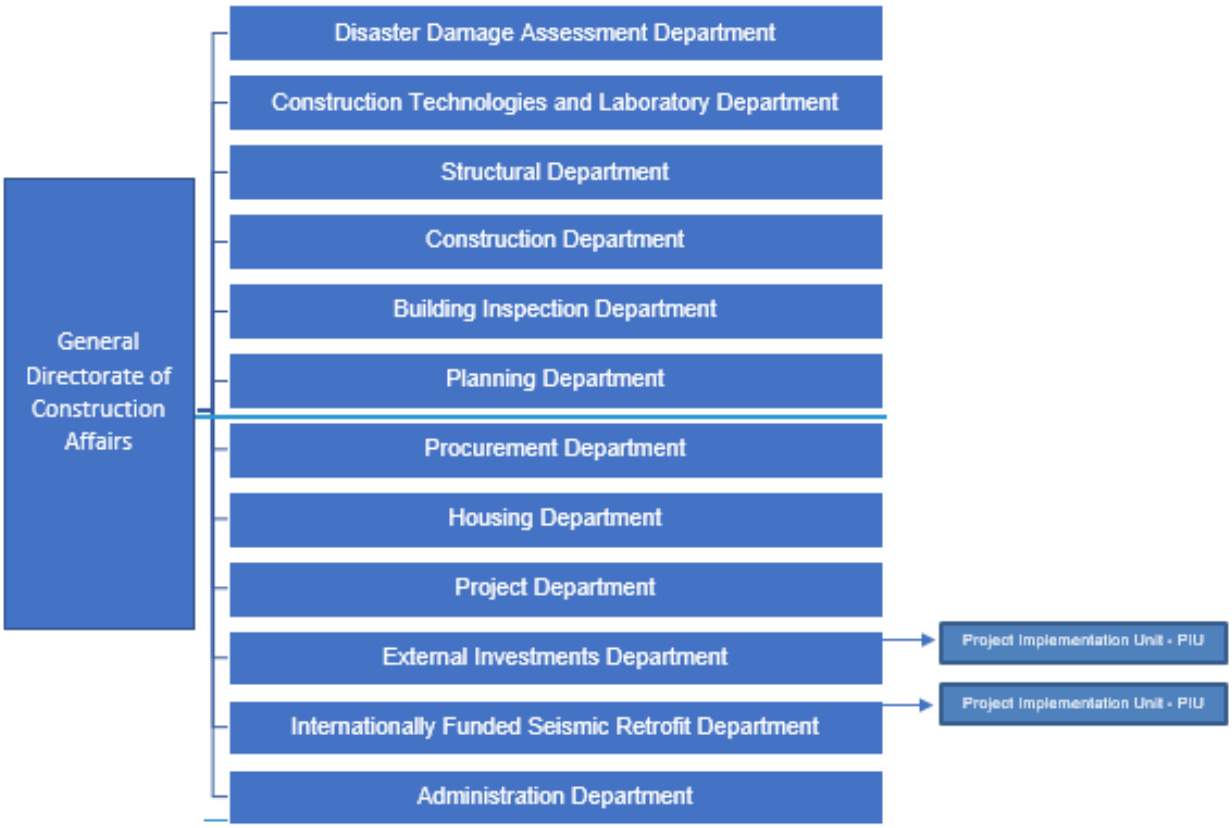


Figure 7: Organigram of General Directorate of Construction Affairs

6.1.1.1. Environmental and Social Implementation Capacity

MoEUCC's GDCA would assume responsibility for Components 1 and 3a and serve as the main implementing agency for Component 1. Within GDCA a separate department, the Department of External Investments has been established in 2019 to work as the dedicated Project Implementation Unit (PIU) to manage the ongoing Energy Efficiency Public Buildings Project, Component 1 and Component 2, which consists of Project implementation and TA activities related to the public building sector. The PIU is responsible for the day-to-day management of the Energy Efficiency Public Buildings Project (P162762) under terms of reference, with adequate staffing, and with qualifications and functions acceptable to the Bank. PIU currently includes about 16 technical staff and 10 individual consultants hired to support the PIU in the areas of procurement, financial management, engineers (electrical, mechanical, civil) project assistance, environment and social issues, and communication. Also, this Department successfully managed the "Seismic Resilience

and Energy Efficiency in Public Building Project" from commenced of the Project to the end of 2022. A new team will be established under this existing PIU to administer all aspects of the proposed Project while benefitting from cross-fertilization from the staff and consultants already working on the implementation of the EEPBP.

The new team under the same PIU would be responsible for the overall implementation, management, and coordination of the Public and Municipal Renewable Energy Project;

(i) execution of the Project activities' preparation, design, and implementation phases following guiding principles and good practices with utmost technical quality;

(ii) the overall management, coordination, and implementation of the Project, as specified in this OM;

(iii) procurement for preparation of feasibility studies, detailed designs, and technical specifications/bills of quantity works contractors, construction supervisors, and TA consultancies;

(iv) assurance of the proper application in the Project of the requirements, criteria, policies, procedures, and organizational arrangements outlined in the OM;

(v) the undertaking of entire bidding processes, financial management arrangements, and preparation of withdrawal applications in the scope of the Project;

(vi) monitoring and evaluation of the Project against the progress indicators identified in the Project Appraisal Document; and

(vii) communications and outreach, consultations with user committees, and raising awareness about the Project.

The GDCA will ensure that the PIU, and its other departments supporting the Project, are staffed acceptably to the Bank with qualified staff to provide adequate resources to support, inter alia, procurement, financial management, disbursement, environmental and social, communications and outreach and site-specific monitoring functions required by the Project. This includes increasing the operational capacity of the PIU to enable it to manage both Bank Projects by hiring qualified individual consultants specialized in designated operational areas.

The PIU will hire experts to strengthen the PIU for technical issues related to the project. The PIU in the short run shall ensure the on-boarding of the below listed key staff – at the least considering the additional workload to be borne by the Project's investment package.

E&S&OHS Staffing in PIU

Individual expert	# of experts to be recruited	Date of recruitment
Environmental Specialist (part-time/full-time)	1	*After 90 business days of Project effectiveness*
Social Specialist (part-time/full-time)	1	*After 90 business days of Project effectiveness*
Occupational Health and Safety Expert (part-time/full-time)	1	*After 90 business days of Project effectiveness*

To ensure smooth implementation under kick-off, additional key and support staff such as experts and junior engineers on energy, electrical engineer and assistants may be hired according to the needs after the effectiveness date of the project within the 1st year. Further staffing needs to ensure smooth implementation are closely monitored by the PIU and addressed per the emerging needs of the Project. Figure 4 demonstrates the Organigram of the PIU.

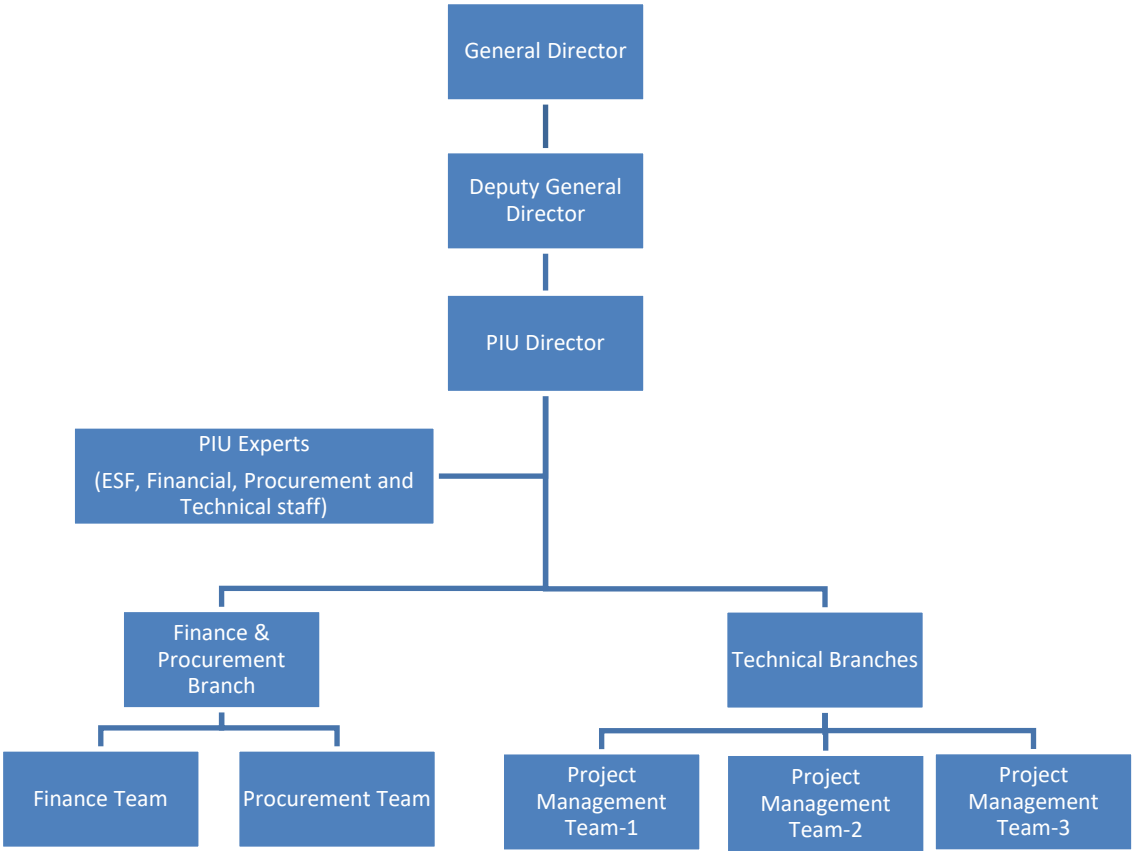


Figure 8. Organigram of the PIU

6.2. Roles and Responsibilities

MoEUCC will hire dedicated part-time/full-time (depending on the workload) Environmental, Social, and Health and Safety Individual Consultants/Specialists to fulfill the requirements of WB ESF and associated ES Standards. Individual Consultants/Specialists in the PIU will be responsible for continuous monitoring of construction works to assure compliance with the ESMF, SEP, LMP, and site-specific ESMPs/ESMP Checklist and will inform WB on regular basis. The PIU Individual Consultants will prepare inputs for the 6-monthly progress reports and submitted to World Bank for review.

The PIU will be responsible for procurement of the consultant firms for the Feasibility Study, Design-Supply-Installation, and supervision works. The feasibility study consultant will prepare a feasibility report of sub-projects as well as the ESMPs/ESMP Checklist depending on the sub-project E&S risk level determined by E&S Screening Checklist (Annex 2), SEP and OHS Plan. PIU will also guide and assist the feasibility study consultants in the preparation of site-specific ESMPs/ESMP Checklist and OHS Plan. PIU will be responsible for the review of all documents and the quality of each ESMP/ESMP Checklist, OHS Plan, and site-specific common SEPs prepared by the feasibility consultant. PIU will submit the first 3 sets of ESMPs/ESMP Checklists, SEP and OHS Plan for each type of sub-projects (rooftop/car parks/ground mounted) to WB for prior review. Based on mutual agreement between PIU and Bank, the approval process for ESMPs/ESMP Checklists can be moved to post-review. PIU will guide the DSI consultant that will be responsible for implementing the ESMPs/ESMP Checklist, OHS Plan, and sub-management plans. The PIU will hire a supervision consultancy company to undertake technical supervision of sub-projects and provide training on the supervision methodologies to the Provincial Directorates of Environment, Urbanization and Climate Change (PDoEUCCs) which already conduct technical and environmental audit of all types of

activities/projects implemented in their respective provinces. After the training is delivered, the PIU will evaluate the technical capacity and workload of PDoEUCCs. Those PDoEUCCs, whose supervision capacity is found sufficient, will be designated by the PIU to supervise the implementation and sustainability of the Grievance Mechanism of sub-projects within their respective provinces. Where the supervision capacity of PDoEUCCs is found insufficient, the supervision consultancy company will remain responsible for the supervision of sub-projects.Supervision of the sub-projects and implementation and the sustainability of the Grievance Mechanism will be carried out by regionally based supervision consultants or the Provincial Directorate of Environment, Urbanization and Climate Change in the provincial base if appropriate.

PIU will approve site-specific screening (pls. see Annex 2) for each of the proposed sub-projects by feasibility consultants.

6.3. Project Implementation Unit

PUMRE Project Implementation Unit (PIU) is formed by civil servants of MoEUCC as well as external environmental, social, and OHS experts, and will be located on the premises of the MoEUCC part-time/full-time depending on the workload. PIU will have main responsibilities regarding the Project implementation, project coordination, monitoring activities, and reporting.

An independent Environmental Expert, Social Expert, and Occupational Health and Safety Expert will be engaged by the PIU on a part-time/full-time basis for the entire period of the project implementation. The Environmental Expert, Social Expert, and OHS Expert will be responsible for ensuring proper environmental and social management of all project activities and will conduct environmental and social supervision by carrying out document reviews, audit and site visits, and interviews with DSI consultants, supervision consultants, and other project-related persons. The Environmental Expert, Social Expert, and OHS Expert would be responsible for reviewing all environmental, social, and OHS documentation (site-specific ESMPs/ESMP Checklist, OHS Plan, and site-specific sub-management plans, such as SEPs, LMPs) submitted by sub-project supervision consultants, providing recommendations, advising on the sub-project category advising on the quality of, and clearing the environmental and social safeguard documentation on behalf of the PIU.

6.4. Project Beneficiaries

The immediate beneficiaries in the Project will be the ministries and other central government institutions, such as the Ministry of Health (MoH), Ministry of Family and Social Services (MoFSS), Ministry of Youth and Sport (MoYS), Ministry of Agriculture and Forestry (MoAF), Ministry of Culture and Tourism (MoCT), Ministry of National Education (MoNE), Ministry of Energy and Natural Resources (MENR), and the Council of Higher Education (state universities). Public buildings to be installed PV panels would include hospitals, dormitories, governor buildings, university campuses, ministerial office buildings, libraries, conference centers, etc. Citizens who use services provided by the central government and municipal facilities targeted by the Project are also expected to indirectly benefit since budgetary resources saved from energy bills could be deployed to enhance other priority services.

Since PV panels will be installed on the roof, car parks, and/or ground mounted of existing buildings, the PIU will establish and maintain close coordination with local units/provincial directories and makes every effort to ensure necessary information with appropriate communications tools through local units/provincial directories.

6.5. Consultants

6.5.1. Feasibility Study Consultants

For the proposed sub-projects, detailed relevant audits will be carried out by a Feasibility Study Consultant Company, in order to evaluate the proposal for solar system installation, estimate energy savings, assess their financial viability, and identify potential environmental and social impacts that the proposed installation may cause at a regional level.

After the audit is completed, the consultant will prepare feasibility studies including cost-benefit analysis, sub-project specific ESMP/ESMP Checklist, sub-project specific SEPs, and OHS Plan. These documents as part of the feasibility studies will include analysis and quantification of the presence of the amount of waste and hazardous waste materials, specifically asbestos including methodology specifications and bill of quantities for removal, packaging, transport, and disposal/interim storage of these waste and hazardous waste materials, personal safety equipment. This will also include the guidelines for the location where the asbestos can be disposed of and the temporary storage location for waste and hazardous waste as per the World Bank's ESF, project ESMF, and national legislation. PIU will review and approve all documents and designs prepared for this Project in consultation with line ministries of the sub-projects concerned. The sub-project feasibility study consultants will visit each sub-project site at least once, or more if needed, during the preparation of technical documentation. During these visits, the consultants will meet with project beneficiaries to discuss any issues related to sub-project implementation.

Feasibility study consultants shall be responsible for ensuring that respective provisions of sub-project specific ESMPs/ESMP Checklist and OHS Plan are duly incorporated into the project design if the study is feasible for the investment. The feasibility consultant is also responsible for organizing and holding stakeholder engagement meetings. The feasibility consultant will be required to retain qualified Environment, Social, and Occupational Health and Safety (ESOHS) staff.

6.5.2. Supervision Consultant

The supervision consultant will be responsible for auditing, monitoring, and reporting on the sub-project implementation at a regional level. The consultant will be also responsible for ensuring proper environmental, social, and OHS management of all project activities, interviews with DSI consultants, and other project-related persons. The consultant has to retain environmental, social, and OHS experts and the implementation of the ESMP/ESMP Checklist, OHS Plan, and other sub-management plans including GM on the site will be controlled by these experts. The procurement of a supervision consultant will be the responsibility of PIU. There are 21 electrical distribution companies in Türkiye. Considering both the legal permissions and the geographical proximity of the buildings to be audited, it is important to make the tenders regionally by evaluating the borders of the distribution companies. As mentioned in previous section, the PIU will hire a supervision consultancy company to undertake technical supervision of sub-projects and provide training on the supervision methodologies to the Provincial Directorates of Environment, Urbanization and Climate Change (PDoEUCCs) which already conduct technical and environmental audit of all types of activities/projects implemented in their respective provinces. After the training is delivered, the PIU will evaluate the technical capacity and workload of PDoEUCCs. Those PDoEUCCs, whose supervision capacity is found sufficient, will be designated by the PIU to supervise the implementation and sustainability of the Grievance Mechanism of sub-projects within their respective provinces. Where the supervision capacity of PDoEUCCs is found insufficient, the supervision consultancy company will remain responsible for the supervision of sub-projects.The Provincial Directorate site engineer will also be responsible for auditing the DSI consultants' implementation of the ESMP/ESMP Checklist, OHS Plan, and related sub-management plans, reporting and coordinating with PIU as a supervision consultant.

6.5.3. Design-Supply-Installation (DSI)Consultant

Design-Supply-Installation (DSI) consultant will be responsible for the design, supply, and installation of PV panels also in charge of complying with all environmental and social mitigation measures, requirements, and procedures, and for the implementation of the respective sub-project specific ESMPs/ESMP Checklist, OHS Plan, LMP. Also, the preparation of the site-specific sub-management

plans depending on the sub-project requirements and site-specific LMP is the responsibility of the DSI consultant too. The civil/construction works consultants will need to retain qualified EOHS staff and comply with implementing, monitoring, and reporting requirements defined in this section. DSI Consultant will be contacted by PIU for the sub-projects.

DSI Consultants' EOHS Staff

Each DSI consultant is responsible for retaining qualified Environment and Occupational Health and Safety (EOHS) staff to oversee compliance with mitigation measures applicable to their scope of work. The DSI consultants are responsible for selecting EOHS staff, which includes environment, and OHS with the necessary skills, experience, and availability to perform their duties adequately. Necessary qualifications include previous experience monitoring the implementation of mitigation measures on a project of similar scope and scale. The experience in World Bank's ESF is preferred. DSI consultant shall ensure their EOHS staff have completed all necessary EOHS training before the sub-project implementation, as required per all requirements concerning the ESMF and other commitments made under the project. EOHS staff will be responsible for the day-to-day implementation of mitigation measure requirements identified in respective ESMPs/ESMP Checklist, OHS Plan, and LMP. EOHS staff will be responsible for:

- Acting as the key point of contact for the PIU EE, OHS experts, as well as supervision consultants, regarding compliance with mitigation measures, set out in the site-specific ESMPs/ESMP Checklist, OHS Plan, and sub-management plans, as relevant.
- Ensuring that all personnel/workers, including subcontractors, have received OHS, and environmental training concerning the project requirements set out in the ESMF, site-specific ESMP/ESMP Checklist, OHS Plan, and sub-management plans as relevant, as well as LMP, before work on the project site and have been informed of mitigation measures and their associated responsibilities when working.
- Ensuring that all personnel complies with mitigation measures.
- Inspecting active work sites daily, and documenting compliance through the completion of a daily compliance checklist and photographs
- Preparing required reports to the supervision consultants and managing compliance documentation during all phases of installation
- Ensuring that compliance documentation is complete and available for PIU or supervisory body auditing
- Managing any rehabilitation of environmental damage that may have occurred.
- Accident/incident reports to the supervision consultant

To implement the ESMF the PIU, Supervision consultants, and DSI Consultant will follow the Process Cycle for Component 1 as presented in Table 6 below:

Table 4. Process Cycle for Implementation of Component 1 Investments

	Activity	**Lead Responsibility**	**Secondary Responsibility**	**Timeline (a month for implementation of the activity)**
1.	Establishment of GM at the project and sub-project level	PIU	Supervision Consultants/ PDoEUCC	Before the project's effective date and the start of sub-project activities

2.	Stakeholder Engagement Plan Implementation including Public Consultations with NGOs and stakeholders	PIU	Supervision Consultants/ PDoEUCC	Throughout the project implementation
3.	Establishment of LMP at the project and sub-project level	PIU	DSI Consultant	Throughout the project implementation
4.	Outreach and community public hearing for sub-project implementation	PIU	Feasibility Study Consultant Supervision Consultant	Throughout the project implementation
5.	Development of sub-project conceptual design, ESMPs/ESMP Checklist, OHS Plan	Feasibility Consultant	PIU	Throughout the project implementation
6.	Development of technical design and Sub-Management Plans (ESS instruments)	DSI Consultant	PIU Supervision Consultant	Throughout the project implementation
7.	Public disclosure and consultations for the sub-project ESMPs	PIU	Feasibility Study Consultant	Throughout the project implementation
8.	Sub-project design approval	PIU	DSIConsultants with project beneficiaries	Throughout the project implementation
9.	Project Appraisal Document (PAD) development and approval	PIU	WB	Throughout the project implementation

6.6. Consultants in Pilot Projects

As mentioned in previous chapters Component 1/Subcomponent 1b will support investments in pilots for 3 to 5 sub-projects to combine solar PV investments with investments in light-emitting diode (LED) to replace inefficient lighting technologies and electrification of heating and cooling which would allow additional RE capacity to be deployed and ultimately reduce the buildings' emissions. In these pilot projects, there will be a different consultancy structure. After the feasibility study consultant's work is completed, PIU will select the buildings for investment in heat pumps and lighting in addition to solar PV panels. After the selection is completed, PIU will procure for DESSUP consultant which is responsible for the design and supervision of the pilot projects. The implementation of the grievance mechanism is also the responsibility of the DESSUP consultant. Following the completion of the design of the sub-projects to be prepared by the DESSUP consultant, the contractor tender will be held by PIU. The contractor will be responsible for the installation and construction of PV panels and also heat pumps and lighting technologies and also preparation of sub-project LMPs. DESSUP consultant will supervise the contractor throughout the construction and installation phase. This procedure is limited to 3 or 5 buildings as the pilot projects.

6.6. ESMF Process Flow at the Sub-Project Level

6.6.1. Identification of Sub-Projects

Under Component 1, Sub-projects for the installation of PV panel investments in the public sector will be selected based on prioritization assessment at the MOEUCC level.

Preliminary Eligibility Criteria for the public buildings suitable for PUMRE Project are given in detail under 1.2.1.Project Components.

6.6.2. Screening of Subprojects for Environmental and Social Risks and Impacts

6.6.2.1. List of Non-Eligible Types of Sub-project for PUMRE Project

The initial screening for the eligibility of the sub-project will be based on the list of excluded sub-projects that will be not financed by the WB.

Non-eligible types of sub-projects are listed in Table 7 below.

Table 5. **List of Non-eligible types of sub-projects for the PUMRE Project**

Administrative services and facilities, i.e., rehabilitation of political parties and trade unions' offices, rehabilitation of cooperatives' or other owner groups' facilities,
Religious infrastructure facilities and services as the rehabilitation of mosques, churches, and other buildings for religious purposes,
Facilities with a commercial character such as private, commercial, and entertainment facilities (e.g., bars, dance clubs, camps, health strengthening centers, summer camps for children)
Buildings related to national defense and correctional facilities (prisons),
Procurement of transport units or other machines to be used by the mayor's office workers
Other types of sub-projects and activities that would have a negative impact on the environment, encourage the marginalization of social and ethnic groups, and duplicate other projects and activities supported by other institutions are not in compliance with Turkish Legislation.
Sub-projects submitted by central government institutions when previously installed PV panels under the Project have not followed their obligations regarding maintenance and operations.
Any sub-project which would fall within the scope of ESS5, Land Acquisition, Restrictions on Land Use and Involuntary Resettlement, i.e., buildings that involve land acquisition or resettlement, including economic displacement.
Any sub-project that involves altering the quality and/or quantity of international waterways as defined in OP 7.50 of the Bank, reliance on existing hydroelectric dams triggering any dam safety aspects under ESS4, etc.
Any sub-project which would be classified as *High Risk*, *Substantial Risk project* according to WB Environmental and Social Framework (details are given in the ESMF).
Any sub-project which would have significant impacts on natural habitats, critical habitats, or biodiversity
Any sub-project which would have significant impacts on cultural heritage

6.6.2.2. Sub-project Screening Procedures

Once it is confirmed that the sub-project is not part of the list of non-eligible types of sub-projects, the feasibility study consultant's environmental and social experts in the fields will carry out a rapid assessment of the likely environmental and social impact, that will be based on the requirements of national legislation and WB ESSs, completing the screening checklist presented in Annex 1-2. Sub-project activities will be also checked against WB criteria for High/Substantial Risk Projects.

This will make it possible to identify the type and scale of potential environmental and social impacts and determine to which risk category the sub-project should be attributed. Subsequently, the scale and level of the environmental and social assessment (ESA) required for a sub-project will depend on the scale of the sub-project, its location, the sensitivity of environmental and social issues, and the nature and magnitude of potential risks and impacts. PIU will review E&S Screening Checklists and approve the risk categories of sub-projects. The risk categories of the World Bank are given in Annex-7.

Taking into account the scale of the proposed sub-projects, it is expected that the magnitude of their environmental impacts to be moderate, and their social impacts to be moderate. Therefore, only sub-projects that are rated as "Moderate Risk" or lower will be considered for PUMRE Project. Table 2 guides the various types of mitigation activities that could be proposed for PUMRE sub-projects.

6.6.3. Preparation of ESF Instruments

Sub-Projects' ESMPs (Format and concept of the ESMP are provided in Annex 3 including) and ESMP Checklist will be prepared by Feasibility Study Consultants' E&S and OHS experts and reviewed by PIU. ESMPs for rooftops and ESMP Checklists for car parks or ground-mounted will be prepared. The purpose of the ESMP is to identify the potential impacts associated with the installation and construction of sub-project activities and improve the environmental and social aspects of sub-projects by minimizing, mitigating, or compensating for negative effects.

For all types of sub-projects (installation of PV panels on the rooftop, car parks or ground mounted, etc.), it is necessary to disclose the ESMPs/ESMP Checklist on MoEUCC's official webpage, and the DSI consultant will be responsible to keep it available on the construction site at a place available for the stakeholders (visitors, building users, building employees, etc.) and interested parties throughout the project implementation. For that purpose, it is necessary to disclose these documents on the MoEUCC's website 15 days before the public consultation meeting for stakeholders to review as well as provide hard copies to key interested parties (environmental authorities). Table 6 indicates the process flow for the risk management instruments development:

Table 6. **ESF Instruments Development for Component 1 Investments**

Step 1	(a) PIU (engineers and Environmental Expert, Social Expert, and OHS Expert) conduct screening of the sub-project about the non-eligible type of sub-projects;
	(b) If the sub-project passes the screening for the list of the non-eligible type of sub-projects, PIU (engineers and Environmental Expert, Social Expert, and OHS Expert) and Feasibility Study Consultant will complete the Environmental and Social Screening Checklist to identify the environmental and social risk level, and the respective environmental and social assessment instruments.
	(c) PIU will review E&S Screening Checklists and approve the risk categories of sub-projects.

Step 2	(d) If the sub-project is selected for funding, Feasibility Study Consultant prepares a full ESMP/ESMP Checklist/OHSP/ /SEP/ for the sub-project. The format of the documents is given in Annexes.
Step 3	(e) Feasibility Study Consultants will submit the full set of environmental and social documents prepared specific to the sub-projects to the PIU and after evaluation of the PIU, PIU will be submitted to the WB for review and approval.
Step 4	(f) The feasibility study consultant and PIU will conduct a disclosure of the ESMP/ESMP Checklist/OHSP / LMP/SEP. These documents will be the annex of the tender documents.
Step 5	(g) Upon approval of sub-projects, PIU will complete the overall sub-project appraisal and proceed with the signing of the financing agreement with respective sub-project DSI consultants.
Step 6	(h) Sub-project-specific method statements and sub-management plans will be prepared by DSI consultants and submitted to the supervision consultant and PIU for approval. Methods Statements will be integrated into ESMPs following their approval prior to any construction works start.
Step 7	(i) DSI consultants implement the mitigation measures set out in the site-specific instruments, during construction works.
Step 8	(j) The PIU Environmental Expert, Social Expert, OHS Expert, and Supervision Consultants conduct ES auditing and monitoring during the implementation of the sub-project.
Step 9	(k) Monitoring and reporting results will be included in semiannual reports that will be prepared by PIU.

6.6.4. ESMP Review Process

As explained above, a site-specific evaluation will be conducted according to the WB's Environmental and Social Framework (ESF), this ESMF and site-specific ESMPs/ESMP Checklist, OHS Plan and sub-project specific Stakeholder Engagement Plan (SEP) will be prepared as a result of such evaluation. These will be the responsibility of the Feasibility Study Consultant, based on the information from the Environmental and Social Screening Checklist (Annex 1-2) developed by PIU Environmental and Social Experts. The ESMPs/ESMP Checklists and OHS Plan must be annexed to the bidding documents for construction works. Sub-project-level Labor Management Procedures (LMP) will be prepared by a DSI consultant as mentioned before.

The preparation of the ESMPs, OHS Plan, and SEP would require an estimated period of about 30 days for each site as and when needed. This period also includes MoEUCC's review and disclosure. All ESMPs will be developed and disclosed by MoEUCC on their official website before any construction tendering begins.

Implementation of ESMP and OHSP on the ground will be part of the DSI consultant's task, however in case of any non-compliance; PIU will inform the project participant which is expected to take corrective action as the primary responsible party. The distribution of the responsibilities of all parties involved in the project is given in Table 9.

The PIU will be responsible for the review of all documents and the quality of each ESMP/ESMP Checklist and OHSP. PIU will submit the first 3 sets of ESMPs/ESMP Checklists for each type of sub-projects (rooftop/car parks/ground mounted) to WB for prior review. Based on mutual agreement between PIU and Bank, the approval process for ESMPs/ESMP Checklists can be moved to post-review.

Table 7. **Roles and Responsibilities for the Project ESF Implementation**

Responsible Party	Responsibilities
World Bank	• review the first 3 sets of the site-specific ESMPs/ESMP Checklists for each type of sub-projects (rooftop/car parks/ground mounted) and provide no objections to MoEUCC • conduct implementation support missions in order to ensure that the project is in compliance with WB Standards • review and clear, then disclose the finalized ESMF (after the MoEUCC discloses the ESMF) on WB's official website
Feasibility Study Consultants	• conduct the initial project site assessment and prepare the E&S Screening Checklist • develop the ESMPs/ESMP Checklists and OHSPs, sub-project specific SEPs, etc. • comply with the World Bank and local relevant legislation specified in the tender documents
Supervision Consultants	• monitor/assess the DSI consultant's activities in compliance with the ESMP/ESMP Checklist and OHSP • ensure the sustainability of the grievance mechanism • prepare the ESMPs/ESMP Checklist and OHSPs monthly progress reports for the review of MoEUCC • give feedback and notice to the MoEUCC • receiving, recording and if possible, resolving the grievances/concerns/suggestions training to PDoEUCC and/or DSI consultant on solar energy systems
DSI Consultants	• implement ESMPs/ESMP Checklists and OHSPs on site, if required can revise these documents together with the feasibility study consultant • prepare method statements for implementing E&S mitigation instruments • prepare sub-project LMP to ensure health and safety measures are taken on site • ensure that construction-related grievances are received and addressed to Supervision Consultant on weekly • monitor site activities on a regular (daily, weekly monthly, etc.) basis as defined in ESMPs and OHSPs • prepare ESMF's related sub-management plans (e.g. Waste Management Plan, Pollution Prevention Plan, Community Safety and Traffic Management Plan, etc.) and site-specific method statements • notify the PIU about any significant incident (accidents, spills, fatalities, etc.) immediately.

Responsible Party	Responsibilities
MoEUCC/PIU	• reiew E&S Screening Checklists and approve the risk categories of sub-projects • implement the project and monitor the utilization of the funds • ensure that funds are used to finance eligible expenditures in accordance with the applicable policies and procedures stipulated in the loan agreement. • collect data for results indicators from the field through its M&E unit, and by outsourcing as needed, monitor the quality of data collection, and evaluate results. • follow the project progress and report to the government and WB management on implementation progress, results, potential issues, and proposed solutions • realize and follow the required correspondences with governmental authorities • maintain at least one Environment and one Social and one Occupational Health and Safety Expert part-time/full-time depending on the workload throughout the implementation period of the project. • train to feasibility study and supervision consultants on gender equality and gender-based violence review and verify the data and evaluate results before including these results in reports to be sent to the World Bank • identify the first set of priority public buildings to be intervened • produce data necessary to prepare regular project reports requested from the stakeholders • handle the procurement activities through PIU • develop a project operational manual in consultation with the WB • establish the grievance mechanism and resolve the complaints both at the provincial and national levels. • Award the construction contracts • develop, consult, adapt, disclose, and monitor the implementation of the ESMF, Labor Management Procedure (LMP), Stakeholder Engagement Plan(SEP), Environmental and Social Commitment Plan (ESCP) both in the Turkish and English acceptable to the World Bank • report to the WB on compliance with environmental and social requirements set out in the project framework documents • notify the World Bank about any significant incident (accidents, spills, fatalities, etc.) in 48 hours and send an incident investigation report together with the corrective action plan in 30 business days to the World Bank.

6.6.5. Public Consultation and Information Disclosure

Sub-projects specific common Stakeholder Engagement Plans (SEPs) proportionate to the nature and scale of the proposed subprojects will be prepared by a feasibility study consultant and implemented/monitored by a supervision consultant or PDoEUCC.

The timing and methods of engagement with stakeholders throughout the life cycle of the project will be described in SEP. Public consultation activities (including public consultation meetings) will be carried out as per SEP to be prepared.

- Records of meetings and consultations with stakeholders will be included in the draft and final E&S assessment documents.
- The site-specific environmental and social documents will be disclosed on the official webpage of GDCA. Before sub-project approval (by the World Bank), GDCA will submit Turkish versions of the final ESMPs and SEPs documents of these sub-projects to the World Bank.

6.6.6. World Bank Clearance

PIU will submit the first 3 sets of ESMPs/ESMP Checklists for each type of sub-projects (rooftop/car parks/ground mounted) to WB for prior review and when the WB is confident that MoEUCC has demonstrated that the process is accurate, WB will transfer this prior review to post-review. During the implementation of the project, the Bank can mutually agree with GDCA, that GDCA conducts a prior review of the environmental and social assessment documents of the sub-projects and the World Bank conducts post review.
The risk categorization of sub-projects is tentatively shared in this ESMF document, but in case of any change in the risk category, GDCA should discuss the new risk category with the WB and reach a consensus.

6.6.7. Incorporation of E&S Issues in Works Contracts

For all sub-projects, the site-specific ESMPs/ESMP Checklists, OHS Plans, and main SEP and LMP will be attached to the procurement documents and be part of the contract with the DSI consultant selected to carry out the sub-project works. These sections include potential impacts that may occur during the set of works in question and measures that the DSI consultant needs to take to mitigate them.

6.6.8. E&S Monitoring, Supervision, and Reporting

6.6.8.1. Monitoring and Supervision

The environmental and social monitoring system starts from the construction phase of the project through the operation phase, verifying the implementation of the mitigation measures in the E&S instruments and assessing their effectiveness, thus enabling the PIU and the WB to take action when needed.

The supervision consultant or PDoEUCC will be responsible for monitoring, supervising, reporting and coordinating with the PIU of the sub-projects as mentioned in previous chapters. In addition to the supervision consultant and the provincial directorates, this process is also in charge of the PIU.

PIU will carry out regular supervision of sub-projects during construction and operation to ensure that the ESMPs, OHSPs, SEPs, and LMPs are being duly implemented and that GMs are accessible and functional Environmental and Social Monitoring Report is one of the most important tools to record the monitoring activities which will be submitted to PIU by the supervision consultant during the construction phase and will at least include all the issues defined in the ESMP/ESMP Checklist of the sub-project. When Supervision Consultant or PDoEUCC notices any problems in ESMP, SEP, or LMP implementation it will inform PIU and the relevant DSI consultant and agree with them on steps to rectify these problems. Specifically, for any significant environmental or social incidents (e.g. fatalities, lost time incidents, environmental spills, etc.), the DSI consultant will inform PIU immediately and PIU will notify the World Bank in 48 hours. The incident report including Root Cause Analysis (RCA), precautions, and compensation measures taken, will be submitted to GDCA in 30 business days and GDCA will forward the incident report to the World Bank. GDCA will also report its findings to the World Bank in its biannual project progress report or more frequently, as needed to bring issues to the attention of the World Bank.

6.6.8.2. Reporting

6.6.8.2.1. Monthly Reports

DSI consultant's ESOHS Officers shall prepare and submit a monthly progress report to the supervision consultant/PDoEUCC and the PIU to document construction and compliance activities completed during the month and to track the resolution of any issues that may have occurred. The reports should include the following information for the period but not be limited to these:

- Summary of completed construction activities
- Estimate of remaining construction and schedule
- Summary of compliance activities for the relevant project-specific ESMP/ESMP Checklist as needed.
- The updated list of all ESOHS- incidents that occurred during the project
- Records of the training provided to the DSI consultant's workers
- Follow-up information from any past issues that are still being resolved
- Photographs of project activities related to the implementation of ESMP mitigation measures
- Daily compliance checklist each day that works occurs in the field.
- Outcomes of activities in line with the Environmental and Social Monitoring Plan
- Grievances received during the reporting period, types and subjects of the grievances, resolution status
- Records of the public consultation activities carried out, feedback received from stakeholders
- Information with regards to the compliance with sub-project LMP

The supervision Consultant shall also prepare and submit a monthly monitoring report to PIU. The reports should include the following information for the period:

- Highlights of DSI consultant's monthly report
- The output of the supervision consultant's oversight activities

6.6.8.2.2. Biannual Progress Reports

The PIU shall prepare and submit a biannual progress report (this report will be a part of the project biannual progress report that will cover all progress such as procurement, finance, etc. related to the project) to the World Bank to document construction and compliance activities completed during the

period, monitoring results and track the resolution of any issues that may have occurred, for all sub-projects under implementation. The PIU will use daily compliance checklists and monthly compliance reports prepared by the DSI consultant to develop the biannual report.

The biannual report should include the following information for the period:

- Summary of completed construction activities
- Estimate of remaining construction and schedule
- Summary of compliance activities
- Environmental and Social Monitoring Report
- Environmental, social, and OHS Key Performance Indicators (KPIs)
- PIU's and supervision consultants' oversight activities (i.e., site visits)
- The updated list of all EHS incidents that occurred during the project, including attached notices of non-compliance that were issued
- Follow-up information from any past issues that are still being resolved
- Grievances and resolution processes made during the process
- Stakeholder engagement meetings and photographs
- Photographs of project activities

The detailed list of all reporting requirements is presented in Table 10

Table 8. Summary of Reporting Requirements for E&S Implementation

Responsible Party	Reporting Requirement
PIU	• Preparation of the bi-annual Project Progress Report (PPR) biannually to demonstrate the progress made during the reporting period against the results framework developed and target values identified clearly and tangibly. • MoEUCC will notify the World Bank about any significant incident (accidents, spills, fatalities, etc.) in 48 hours, and will send an incident investigation report together with the corrective action plan in 30 business days to the World Bank.
Supervision Consultants	• Environmental and Social monthly monitoring report that provides an assessment of the commitments given in sub-project specific ESMPs/ESMP Checklists/LMPs/SEPs and other E&S instruments and management plans prepared
DSI Consultant	• Environmental and Social monthly Progres Report to document construction and compliance activities completed during the month • Notify the PIU about any significant incident (accidents, spills, fatalities, etc.) immediately

6.6.8.3. Training for the PIU Environmental, Social, and OHS Experts

PIU will provide its respective environmental, social, and OHS staff with training as a part of PIU capacity building on aspects of ESF requirements and relevant instruments including:

- OHS, environmental and social assessments
- Risk screening and ESMP preparation
- Specific aspects of environmental and social risk management implementation and monitoring including waste management, OHS management
- Stakeholder engagement and grievance mechanism (GM)
- Gender equality and gender-based violence
- Codes of conduct
- Monitoring and reporting
- Other relevant topics

6.6.8.4. Training for Feasibility Study Consultants, Supervision Consultants/PDoEUCC

PIU will provide in-depth training to Feasibility Study Consultants, supervision consultants/provincial directorates, and DSI consultant's environmental expert, social expert, and OHS Expert as well as to all other staff responsible for ensuring full compliance with the ESF, and relevant instruments on:

- The World Bank Environmental and Social Framework
- Project-specific instruments namely, ESMF, LMP, SEP,
- OHS, environmental and social assessments,
- ESMP and SEP preparation,
- Community health and safety,
- Stakeholder engagement and grievance redress,
- Sexual equality and sexual-based violence
- Codes of conduct
- Monitoring and reporting, and
- SEA /SH and GBV and COVID-19 prevention measures
- Other relevant topics.

6.6.8.5. DSI Consultants Training

Health, Safety, Environmental and Social Responsibilities

DSI consultants will train their workers on OHS subjects and ensure that they are adequately qualified before beginning work on the sub-project. In addition to applicable worker safety laws, mitigation measures identify specific health and safety requirements that each consultant must comply with. Those requirements should be in line with the World Bank's ESF, WBG EHS General Guidelines, including specific guidelines related to Energy Conservation.

DSI consultants are required to train workers on the environmental and social requirements for the sub-project as a whole, as well as how to comply with applicable mitigation measure requirements when performing their work. In addition to OHS training, other environmental and social training shall be identified in the respective ESMP of the sub-project (e.g. SEA /SH and GBV, waste management, and housekeeping).

Incidents

Incident Reports:

DSI Consultant will notify the Supervision Consultant about any significant incident (accidents, spills, fatalities, etc.) and then Supervision Consultant will inform to the PIU immedialtely. Supervision Consultants are responsible for preparing and submitting incident reports to the PIU's The PIU will notify the World Bank about any significant incident within 48 hours and will send an incident investigation report together with the corrective action plan in 30 business days to the World Bank. Supervision Consultants shall maintain a complete project record of incidents associated with their contract scope of work. The record shall be regularly updated and included with monthly compliance reports submitted to the PIU. Examples of ESOHS incidents include:

- Fires
- Accidents or "near miss" events
- Hazardous material spills that contaminate soil or water resources
- Improvement orders or notices issued by the supervisory body
- Non-compliance with mitigation measures
- Construction workers injuries
- Sexual exploitation and harassment / sexual abuse
- Physical or verbal conflicts with the local community

At a minimum, the incident reports should include:

- Dates the incident occurred and was discovered, if different
- Description of the incident
- Mitigation measures /environmental/social laws that were violated
- Parties present during the event
- Corrective actions are taken to remedy the issue and prevent it from recurring
- Any remaining actions that are required to correct the situation, such as rehabilitation

Notices of Non-Compliance

If any compliance issues are discovered by the PIU Environmental Expert, Social Expert, OHS Expert, and supervision consultants the observing party shall submit a written notice of non-compliance to the alternate party and DSI Consultants that documents the issue and presents preliminary corrective actions, if applicable. Notices of non-compliance shall include the following information:

- Dates the issue occurred and was discovered, if different
- Description of the issue
- Mitigation measures/ environmental/social laws and WB ESF requirements that were violated
- Parties present during the event
- Description of corrective actions taken
- Description of any necessary follow-up actions or longer-term rehabilitation requirements if environmental damage occurred

Corrective Actions

Consultants are responsible for responding to and addressing notices of non-compliance on time and to the satisfaction of the PIU Environmental Expert, Social Expert, and OHS Expert. DSI Consultants will be responsible for the rehabilitation costs and work effort associated with any

environmental/health and safety/social damage that may occur due to non-compliance with mitigation measures/ environmental/social laws.

7. STAKEHOLDER ENGAGEMENT AND GRIEVANCE MECHANISM

7.1. Stakeholder Engagement Plan

As part of Project implementation, it is required to engage with multiple and varied sets of stakeholders for different activities under the Project components. Therefore, a Stakeholder Engagement Plan (SEP) is prepared to provide the framework for the preparation of sub-project level Stakeholder Engagement Plans (SEPs) by a feasibility study consultant. SEP outlines the general principles and collaborative strategy to identify stakeholders for all components of the Project, identify appropriate modes of engagement, and prepare plans for engagement and meaningful consultation throughout the project cycle while ensuring transparency. This includes the identification of disadvantaged and vulnerable groups who can be disproportionately affected by the project activities and appropriate modes of engagement with these groups. The goal of SEP is to improve and facilitate decision-making and create an atmosphere of understanding that actively involves project-affected persons and other stakeholders in a timely manner and that these groups are provided sufficient opportunity to voice their opinions and concerns. The sub-project level "Stakeholder Engagement Plans" (SEPs) will be prepared based on the project level Stakeholder Engagement Plan in accordance with ESS10 of Environmental and Social Framework (ESF). The framework provides for SEP to take into account the existing institutional and regulatory framework within the context of national legal instruments as well as the requirements of ESS10. Project-level SEP and sub-project level are dynamic documents and shall be updated at various stages of the project life cycle. Updating and inclusion of new stakeholders will be done as a continuous process. The SEP outlines the process of identification of stakeholders duly considering all stakeholders relevant to the overall Project including its components and sub-components. The stakeholders include those currently associated with the Project and those who will be associated with the Project at a later stage during implementation. Stakeholders are identified and categorized into ii) project-affected parties, iii) other interested parties, and iv) disadvantaged and vulnerable groups. SEP provides for systematic consultation with all those interproject beneficiaries, project-affected persons, women, vulnerable and poor members of the community, and other stakeholders to understand their interests and influence over the project.

7.2. Sub-project level Stakeholder Engagement Plans (SEPs)

A Stakeholder Engagement Plan for each subproject (based on the type of the sub-project) will be prepared by feasibility consultants. The feasibility consultant will prepare three types of SEP, one for the universities/dormitories, one for the health/medicine faculties/hospitals, and the other one for the public buildings.

The PIU will review, approve and disclose Stakeholder Engagement Plans (SEPs) for public review that will outline how stakeholders will be engaged throughout the course of the project and which methods will be used as part of the process. It will outline the responsibilities of MoEUCC, DSI consultant and feasibility study consultants in the implementation of stakeholder engagement activities. Details on ESMF stakeholder consultation will be also presented in the SEP. The SEP is considered a living document that will be updated throughout the ESMF process and will continue to evolve as the project proceeds through the construction, and operation implementation phases.

Stakeholder engagement activities will be targeted at project-affected persons as well as at other interested parties (PIU, MoEUCC, government agencies, NGOs, businesses, media, public, among others). The SEP will outline special considerations that will be given to ensure outreach to and engagement of disadvantaged and vulnerable groups. The SEP will include the establishment and management of a project-wide grievance redress mechanism, public meetings, trainings and workshops, media and social media communication, disclosure of written materials, involvement of

project liaison officers, as well as a survey among affected persons to gauge satisfaction with the quality of citizen engagement and share additional concerns.

7.2.2. Stakeholder Consultation

Meaningful consultation will be carried out on an ongoing basis as the nature of issues, impacts, and opportunities evolve.

Meaningful consultation is a two-way process, that:

- Begins early in the project planning process to gather initial views on the project proposal and inform project design;
- Encourages stakeholder feedback, particularly as a way of informing project design and engagement by stakeholders in the identification and mitigation of environmental and social risks and impacts;
- continues on an ongoing basis, as risks and impacts arise;
- Is based on the prior disclosure and dissemination of relevant, transparent, objective, meaningful, and easily accessible information in a time frame that enables meaningful consultations with stakeholders in a culturally appropriate format, in relevant local language(s), and is understandable to stakeholders;
- Considers and responds to feedback;
- Supports active and inclusive engagement with project-affected parties;
- Is free of external manipulation, interference, coercion, discrimination, and intimidation; and
- Is documented and disclosed by the Client.

PIU will conduct several consultation methods (the current condition of the Covid-19 pandemic will be considered when selecting the consultation method) to communicate information regarding the Project and collect suggestions, observations, options, and grievances of stakeholders about the sub-projects. The following consultation methods may be applied by PIU:

- face-to-face meetings such as town halls or workshops,
- focus groups,
- written consultations,
- online consultations
- grievance mechanism

7.3. Grievance Mechanism

The Grievance Mechanism (GM) is an arrangement that provides channels for project stakeholders to provide feedback and/or express their concerns and grievances related to project activities. Through this, the GM allows also for the identification and resolution of issues affecting the project. By increasing transparency and accountability, the GM aims to reduce the risk of the project inadvertently affecting citizens/beneficiaries and serves as an important feedback and learning mechanism that can help to improve project impact.

There will be a separate GM that will serve project employees including PIU, DSI consultant, feasibility consultant, supervision consultants and PDoEUCC as addressed in the Labor Management Procedures (LMP) and Stakeholder Engagement Plan of the Project.

The MoEUCC currently has a call center that can be accessed via both phone and website. This call center is used for all site-related issues that are being carried out by the MoEUCC. The MoEUCC/GDCA operates a website for PUMRE Project where all relevant information is being disclosed for review. Moreover, through the complaint submissions section and an e-mail address,

the PIU can collect concerns and grievances from all stakeholders (Annex 5 and 6 provide grievance opening and close out forms). The principle of confidentiality and the right to make anonymous complaints will be enabled.:

E-mail	*yigmenerji@csb.gov.tr*
ProjectWebpage	*www.kamuenerji.csb.gov.tr*
MoEUCC Call Center	Alo181
Grievance Submission	

Within the scope of PUMRE Project, grievances/concerns/suggestions will be handled at multiple levels: (a) DSI Consultants level; (b) Supervision Consultant level; (c) MoEUCC Provincial Directorates level; (d) national level MoEUCC Project Implementation Unit (PIU).

a) **DSI Consultant:** The DSI consultants will be responsible for supplying grievance boxes, installing them in each building, designing and printing posters and brochures about the grievance mechanism and the project registering. grievances/concerns/suggestions by filling out the Complaint and Suggestion Form (provided in Annex 1 and 2 respectively), taking necessary actions to address the grievances/concerns/suggestions, sending the records to the Supervision Consultant and PIU on weekly basis. The DSI Consultant is also responsible to setting up a Grievance Mechanism (GM) for the project workers which will be detailed in further section.

b) **Supervision Consultant:** Each Supervision Consultant will be responsible for receiving, recording and if possible, resolving the grievances/concerns/suggestions that are raised by any stakeholder (public building management, building users, visitors, host communities, or beneficiaries, etc.) due to the installation works within the scope of the PUMRE Project. If the social specialist of the Supervision Consultant is not able to resolve the grievances/concerns/suggestions, they are obliged to direct them to the PIU. If the Project Manager is not able to resolve the requests/suggestions/grievances, he/she is obliged to direct them to the PIU.The Supervision Consultant is obliged to send the record of the grievance/concern/suggestions to the MoEUCC-PIU on monthly basis.

c) **Provincial Directorates of Environment, Urbanization, and Climate Change Level:** Provincial Directorates of Environment, Urbanization, and Climate Change will be responsible for taking the necessary measures to address received grievances/concerns/suggestions regarding the activities carried out within the scope of the PUMRE Project to the extent possible. The PDoEUCC is obliged to send the record of the grievance/concern/suggestions to the MoEUCC on monthly basis. Provincial Directorates responsible for supervision works will also be responsible for the implementation of the GRM Procedure.

d) **MoEUCC Level:** Within the scope of the PUMRE Project, MoEUCC is the main responsible party to collect, recording, and resolving all grievances/concerns/suggestions raised by stakeholders through the above-mentioned levels. There will be a central grievance record to be kept by the social specialist of PIU. MoEUCC is responsible for resolving the collected grievance/concern/ suggestion within 30 days and informing the owner of the grievance/concern/ suggestion about the result. The MoEUCC currently has a call center (Alo181) that can be accessed via both phone and website. This call center is used for all

site-related issues for the projects that are being implemented by the MoEUCC. Call center officers will be informed about the PUMRE project. All complaints/opinions/suggestions coming to ALO181 will be directed to PIU by the call center officers. The MoEUCC/GDCA will operate a website for PUMRE Project where all relevant information is being disclosed for public opinion and review. Through the complaint submissions section and e-mail address (*yigmenerji@csb.gov.tr*) that will be available on the website, the PIU will be able to collect grievances from all stakeholders. The principle of confidentiality and the right to make anonymous complaints will be enabled. This GM procedure will be used for all parties above mentioned. The roles and responsibilities of all parties are detailed in this procedure to ensure the successful implementation of the GM. PIU will lead to the GM and provide support to all parties if deemed necessary.

In addition to the above-mentioned communication channels, the stakeholders may also utilize the Presidency's Communication Center (CİMER) to submit their concerns and grievances about the project implementation. The communication channels of CİMER are given below.

Webpage	*https://www.cimer.gov.tr* *https://giris.turkiye.gov.tr/*
Hotline	Alo 150
Mail Address	T.C. Cumhurbaşkanlığı Külliyesi 06560 Beştepe – Ankara
Phone	+90 312 590 2000
Fax	+90 312 473 6494

8. ESMF IMPLEMENTATION BUDGET

The project budget allows for the deployment of expertise and resources needed to ensure that project implementation is in line with the ESMF requirements. Table 11 provides budget items for ESMF implementation and associated estimated costs.

Table 9. ESMF Implementation Budget Items and Cost

Budget Items	**Estimated cost**
Individual Environmental, Social, Occupational Health and Safety Consultants	Environmental Expert, Social Expert, and OHS Expert USD 1 million +VAT
Monitoring Activities	
Preparation of site-specific ESMPs, SEPs, and LMPs	All Costs Incurred by Consultants: USD 2 million +VAT
Social, Environmental, and OHS Trainings, Awareness, Information Dissemination	
Capacity building	
Implementation of SEPs, LMPs OHS Plan and ESMPs' measures	All Costs Incurred by both Consultants & DSI Consultants: USD 2 million+VAT
Covid-19 measures	
Total	**USD 5 million + VAT** **0,2% of The Project Budget**

9. ENVIRONMENTAL AND SOCIAL MONITORING

Although the environmental and social impacts of the Project are expected to be moderate; an environmental and social monitoring system, which will be active from the construction phase to the operational phase of the Project, will prevent negative impacts of the Project and monitor the effectiveness of the mitigation measures. This system helps the WB and MoEUCC to evaluate the success of mitigation as part of project supervision and allows taking an action when needed. Both the environmental and social issues covered within the mitigation measures will be monitored and supervised by the appointed specialists through MoEUCC.

The monitoring system provides,

- Technical assistance and supervision when needed,
- Early detection of conditions related to mitigation measures,
- Follow up on mitigation results, and
- Provide information on the project's progress.

The PIU will regularly collect data for results indicators from the field through its provincial directorates and by making routine site visits. The PIU will also be responsible for monitoring the quality of data collected and will evaluate the achieved outputs/outcomes vis-à-vis those set by the Project's Results Framework.

PIU will also monitor the implementation of the ESMF through key environmental and social, health, and safety performance indicators such as:

- number of prepared sub-management plans to address mitigation measures of site-specific E&S and occupational and Community Health and Safety risks and impacts,
- number of E&S and Health and Safety related trainings provided to construction workers,
- number of consultation meetings held with PAP, local community, NGOs, etc.,
- number of near misses, accidents/incidents and injuries, sick leaves
- number of site audits held by PIU and Supervision Consultants
- number of received and resolved complaints

Monthly Monitoring Reports will be prepared by DSI Consultants and reviewed by Supervision Consultant/PDoEUCC. The supervisor consultants will also prepare reports based on the information provided by the DSI Consultants and integrate their assessment and observations into the PIU. The PIU will also integrate the Monthly Monitoring Report and observations of conducted site visits in the Biannual Progress Report.

Project's Environmental and Social Monitoring Plan is provided in Table 10.

Table 10. **Environmental and Social Monitoring of the Construction/Installation Works**

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Responsibility**
Project stage: Preparatory activities for construction/installation of PV panels into the public buildings					
The community safety regulation and protection measures applied	Around the project site	Visual checks	At the beginning of the installation/construction work (first day) Every working day during the project activities	To ensure minimization of health and safety risks – mechanical injuries to the members of the local community	• Supervision consultants/PDoEUCC • DSI Consultants
The OHS protection measures applied to the workers at the sites	On the project site	Visual checks	Every working day during the project activities	To minimize the risks to the occupational health and safety of the workers especially protective equipment and clothes for workers who will remove asbestos-containing roof sheets	• Supervision consultants/PDoEUCC • DSI Consultants
Avoid and minimize safety and health risks for the PAP	In the building and at the construction site	Visual checks	At the beginning of the installation/construction work and continuously every working day	To avoid injuries of the PAP from inhalation of asbestos fibers or other construction dust	• Supervision consultants/PDoEUCC • DSI Consultants
Time for beginning and end of installation/construction work and especially time for removal of existing containing asbestos or	On the project site	Visual checks and documents (schedule) review	Every day	To avoid the environmental, health, and safety risks	• Supervision consultants/PDoEUCC • DSI Consultants

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Responsibility**
other hazardous materials on the roof etc.					
Existence of the dust generated during the installation/construction	On the rooftop, car parks construction site	Visual checks Implementation of Waste Management Plan and Pollution Prevention Plan	For dust generation every day after the completion of work	To avoid and minimize injuries and dust inhalation	• Supervision consultants/PDoEUCC • DSI Consultants
The OHS protection measures applied for the workers at the site, (e.g. Working at height, working with hazardous substances, working with rotating equipment, working with electrified devices, etc)	On the project site	Check the documentation for relevant OHS Certificates and trained workers. Visual checks for using the protective equipment Implementation of OHS Plan and site-specific H&S instructions	Before starting the PV installation works Every working day during the project activities	To minimize the risks to the occupational health and safety of the workers	• Supervision consultants/PDoEUCC • DSI Consultants
Health and Safety records	On the construction sites	H&S site documentation check	Weekly	To ensure necessary Occupational Health and Safety records are kept at construction sites	• DSI Consultants • Supervision consultants/PDoEUCC

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Responsibility**
Dust	On the construction sites, throughout access roads	A visual check to control the implementation of identified dust mitigation measures including respected method statements	Every working day during the project activities	To minimize dust generation to prevent adverse impacts on local communities and the environment	• DSI Consultants • Supervision consultants/PDoEUCC
Noise	On the construction sites	A visual check to control the implementation of identified noise mitigation measures including respected method statements	Every working day during the construction activities	To minimize noise generation to prevent adverse impacts on local communities and the environment	• DSI Consultants • Supervision consultants/PDoEUCC
Housekeeping	On the construction sites	A visual check to control the implementation of identified pollution prevention measures in line with ESMP including the Pollution Prevention Plan Implementation of Asbestos	Every working day during the construction activities	To prevent pollution to protect, construction workers beneficiaries' employees, local communities, and the environment	• DSI Consultants • Supervision consultants/PDoEUCC

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Responsibility**
		management measures			
Primary selection of the waste streams at the project sites	On the construction sites	Review the documentation – identification of the waste type according to the List of waste	At the beginning of the work	To separate hazardous (packaging waste from glue, paints, insulation material) from non-hazardous waste as well as inert from biodegradable waste	• PIU • Feasibility Study Consultants • Supervision consultants/PDoEUCC • DSI Consultants
Identification of the asbestos-containing waste, proper packaging, labeling as a hazardous waste	On the construction sites	Review the documentation – identification of the asbestos-containing waste according to the List of waste	At the beginning of the work	The asbestos-containing waste is hazardous waste with adverse environmental and health impacts	• PIU • Supervision consultants/PDoEUCC • DSI Consultants
The temporary storage of the removed waste/properly packaged and labeled	On the construction sites	Visual checks	On daily basis	To minimize injuries To ensure keeping proper inventory	• Supervision consultants/PDoEUCC • DSI Consultants
Disposal of the wastes accumulated in the temporary storage area	On the construction sites	Implementing Waste Management Plan Transfer receipt or waste records	During the collection and transportation of the wastes, before the final disposal of the removal	To be sure that the wastes will be treated according to the national legislation, international conventions, good practice	• Supervision consultants/PDoEUCC • DSI Consultants need to manage the wastes with licensed companies for acceptance and final disposal of the asbestos-containing waste.

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Responsibility**
					Landfills will have a License for acceptance issued by the MoEUCC
Asbestos contacting waste management	On the project sites Before the removal/dismantling works start	Implementing Waste Management Plan/ Managing asbestos-containing materials with the authorized waste disposal company. Transfer receipt or waste records	During the collection and transportation of the removed asbestos-containing materials Before the final disposal of the removal	To be sure that the asbestos-containing waste will be treated according to the national legislation, international conventions, good practice	• Supervision consultants/PDoEUCC • DSI Consultants need to manage the asbestos-containing materials with licensed companies for acceptance and final disposal of the asbestos-containing waste. Landfills will have a License for acceptance and final disposal of asbestos waste issued by the MoEUCC
Construction debris management	On the construction sites	Visual control of the Implementation of the Waste Management Plan Transfer receipt or waste records	Following all hazardous materials containing parts of buildings have been removed	To ensure that disposal of the construction debris is in line with applicable national regulations and ESMF of the Project	• DSI Consultants are responsible to transfer all construction debris to licensed construction debris landfill of the municipalities. • Supervision consultants/PDoEUCC
Construction vehicle traffic	Construction sites and access roads	Visual control of the Implementation of	On daily basis	To protect construction workers beneficiaries' employees, and local	• Supervision consultants/PDoEUCC

What *parameter is to be monitored?*	**Where** *is the parameter to be monitored?*	**How** *is the parameter to be monitored?*	**When** *is the parameter to be monitored (frequency of measurement)?*	**Why** *is the parameter to be monitored?*	**Responsibility**
		Community Safety and Traffic Management Plan Using appropriate signs and signals		communities from traffic accidents related injuries, fatalities	• DSI Consultants
Grievance Mechanism	Construction site	Implementation of Project Grievance Mechanism through opening and closure of forms and complaints records	Weekly	To make sure all construction-related complaints (including workers' complaints) are addressed properly and records are kept	• Supervision consultants/PDoEUCC • DSI Consultants PIU
Waste stream	Installed PV panels	Implementation of the onsite waste management requirements Transfer receipt or waste records	Regularly	To ensure proper waste collection and disposal according to the national regulatory requirements	Administration of beneficiary institutions
Health and Safety	Installed PV panels	Regular checks and maintenance of the rooftop and car parks,.)	Regularly	To ensure the health and safety of occupants/ users	Administration of beneficiary institutions

10. DISCLOSURE AND CONSULTATIONS

All E&S documents prepared for the project (ESMF, ESCP, SEP and LMP) were disclosed on the PUMREP's official webpage (*www.kamuenerji.csb.gov.tr*) on March 17, 2023 both in Turkish and English before the virtual consultation meeting for the review of the stakeholders. . On March 17, 2023, an official letter was sent for the virtual consultation meeting to be held on March 28, 2023 with the participation of line ministries, beneficiaries, representatives of government institutions and universities.More than 300 participants attended the meeting and the photograps taken from the meeting are given in Annex-14 and the full list of participants is given in Annex-15.The comments and suggestions raised during the consultation meeting are considered during finalization of the ESF documents.

The meeting was led by the Deputy General Director of GDCA, Mrs. Elif UZ and Head of External Investments Department, Mrs. Esra TURAN TOMBAK. Firstly, Mrs. TOMBAK, made a presentation and provided detailed information about the project including (i) financial details (creditor, warrantor, etc.), (ii) objectives, targets and components of the Project, (iii) eligibility criteria of the project, (iv) outputs of the project. Afterwards, environmental and social management of the Project focusing on (i) the objective of preparation of ESF documents, (ii) benefits and potential adverse environmental and social impacts of the Project, (iii) responsibilities of Consultants while handling the project's environmental and social aspects, (v) monitoring and reporting requirements for the grievance mechanism have been presented by individual consultants Environmental (Ganime GÜZEL), Social (Semahat Dicle MAYBEK) and OHS expert (Tülün YILDIRIM). The presentation has been disclosed on the Projects' web page on March 27, 2023.

During the Questions and Answers (Q&A) sessions of the meeting, the participants raised their questions. Some of the questions and the answers/explanations provided by the participants are presented below.

Table 11: Summary of the Questions and Answers Session

QUESTIONS	ANSWERS
How will the application process work?	The SPP Information Form published on the website of the Project should be filled in and sent to batuhan.aksoy@csb.gov.tr via e-mail.
What is the application deadline?	There is no clear date yet. It will be announced to the stakeholders once the date is confirmed.
Will the project have any cost to our organization or is it necessary to allocate funds?	No, this project will be carried out by the General Directorate of Construction Works of MoEUCC with World Bank financing. There is no need for any appropriation transfer by your institution.
What will be the responsibility as institutions from the projecting, construction and acceptance stages?	Institutions have no responsibilities at this stage, all responsibility belongs to the MoEUCC and only the facility management will be transferred to our institution.
When is the feasibility start date?	We are planning to start feasibility studies in

	July 2023.
When is the installation start date?	The project is planned to start in the first quarter of 2024.
Is it possible to participate in the project for a region and a group of buildings that are in this state with almost all of our buildings having a historical registered character?	Such institutions and buildings are not included in the project criteria due to the phrase "Buildings registered as immovable cultural and natural property to be protected are not covered".
Can institutions that have benefited from MoEUCC projects before also benefit from this project?	Institutions that have benefited from the KABEV and KADEV projects carried out by MoEUCC will not be able to benefit from this project.
Our buildings consist of two parts. Do we have to apply for these parts separately?	No, you can fill out a single general SPP Information Form for all your buildings.
What is the eligibility criteria for Roof SPP projects?	Institutions requesting a roof project must comply with the 2019 Turkish Earthquake Code, have an energy identity document obtained in the last 10 years, and an energy identity certificate level must be at least "C" level.
Is there a power plant power limit per institution?	Our setup will be determined not to exceed the “Self-consumption” model.
Should steel construction be ready in the parking lot application or will the steel construction part be made within the scope of the project?	All productions within the scope of the project will be realized by making a tender by MoEUCC.
Will LED conversions be provided by the MoEUCC? Or are transformations also included in the project?	Heat pump and LED conversions will be carried out in pilot applications within the scope of the project.
Will there be a storage system? And will there be energy sales that can be sold to the distribution company?	There will be no storage system. Monthly set-off will be made with distribution companies for self-consumption.

The site-specific ESMPs, SEPs and OHSPs will also be publicly disclosed, and beneficiary, local communities, and NGOs will be consulted on the environmental and social implications of the individual project activities prior to tendering of works.

The ESF documents to be prepared specific for the Project or the sub-projects are living documents which can be updated in accordance with any change on the project and its sub-projects. The feedback submission system will be accessible for all stakeholders throughout project implementation through submission of official correspondences, online feedback forms, e-mails.

Annex- 1. SCREENING OF CATEGORIES OF PROPOSED TYPES OF SUB-PROJECTS

	Project activity	Risk	Remarks	Proposed ESA instrument
1	Installation of PV panels on the rooftop, car parks, or ground mounted/implementation of energy efficiency measures on selected buildings	Moderate	The PIU E&S and OHS experts will conduct the screening of sub-projects using the environmental and social screening checklist provided in Annex 2.	The feasibility study consultant will prepare the site-specific ESMPs/ESMP Checklist/ OHS Plan and site-specific SEPs for installation works. The DSI consultant should prepare site-specific LMP and ensure all environmental, social, and labor safety requirements as per the ESMP/ESMP Checklist and OHS Plan are addressed and provided. The DSI Consultant should also provide EHS training before starting the civil works and throughout the construction activities.

Annex- 2. ENVIRONMENTAL AND SOCIAL SCREENING CHECKLIST FOR SUB-PROJECTS

Sub-project Information	
Sub-project title	
Sub-project beneficiaries	
Proposed date of start of work	
Brief description of sub-project	
Nature of the sub-project	
Site area, location	
Sub-project cost	
Number of beneficiaries (gender desegregated)	
Number of participants to public disclosure (gender desegregated)	

Environmental and social impacts related to the proposed sub-project – the existing situation			
	Yes	**No**	**Details**
Will the sub-project effect have declared protected areas or any natural habitats			
Will the sub-project be located in or near the environmentally sensitive or protected area (in accordance with national legislation)			
Will the sub-project affect critical habitats such as forest ecosystems, wetlands, marshlands, and aquatic ecosystems?			
Will the sub-project affect endangered plant and animal species?			
Will the sub-project affect archaeological sites, historic monuments and settlements?			
Other physical and environmental issues and concerns – its nature and impact			
Is there woods or forest around the project area			
Is there any danger in the woods and forest			
Is there any combustible and flammable subsidence material around the project area			
Is there underground facilities such as gas pipeline, electrical facilities			
Are there any overhead lines such as high-voltage lines			

Is the building of special significance to any vulnerable group (i.e. disabled people, minorities, youth, etc.)			

Impacts of sub-project:			
Will the sub-project affect the daily operation of the building and people?			
Will the sub-project affect the car park operator (if there is a different organization) or small commercial enterprises in the car park area?			
Is the building protected under the law for the protection of cultural heritage?			

Environmental and social/impacts related to sub-project construction/installation			
	Yes	**No**	**Details**
Will the sub-project involve the use of forest trees or other natural resources as building materials?			
Will the sub-project emit greenhouse gases (CO_2, NOx, O_3) or ozone-depleting substances (CFC, methyl bromide, etc.)?			
Will the sub-project use, produce, or discharge hazardous and toxic materials (e.g., hospital waste, industrial waste, or other?)			
Will the sub-project produce or cause occupational hazards?			
Will the sub-project cause dust and noise pollution?			
Will the sub-project cause water pollution?			
Will the sub-project cause soil pollution?			
Will the sub-project result in temporary disruption to the livelihoods of car parks operator and/or any worker in small commercial enterprises in the parking area?			
Will the sub-project cause community safety-related hazards?			
Will the sub-project include significant OHS concerns?			

Will the sub-project cause additional traffic load?			
Will the sub-project cause any adverse impact on the closest sensitive receptors (if there is any)?			
Will the sub-project involve any permanent or temporary restrictions on car park use around the buildings?			
Is there a population negatively affected by the project?			
Other environmental or social impacts (describe the nature and severity of its impact)	*Preparatory phase* *Construction phase* *Operation phase*		

Project Categorization and Need for E&S Instruments, Oversight

Project Category	**☐ Low ☐ Moderate ☐ Substantial ☐ High**
Key Reasons	
Environmental and Social Instruments Required	**☐ ESMP ☐ ESMP Checklist** **☐ OHSP** **☐ SEP** **☐ LMP**

Status	***Agency / Official***	***Name, Signature with Date***
Prepared by		
Checked and Categorized as (low, moderate, substantial, or high) by		
Reviewed and Approved by		

Annex- 3. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) CONTENT AND FORMAT

Environmental and Social Management Plan (ESMP) for sub-projects should outline the mitigation, monitoring, and administrative measures to be taken during project implementation to avoid or eliminate negative environmental impacts. For projects of intermediate environmental risk (Moderate), ESMP may also be an effective way of summarizing the activities needed to achieve effective mitigation of negative environmental impacts (a description of the Environmental and Social Management Plan is provided below).

For each phase, the PIU and supervision consultant/PDoEUCC identify any significant environmental impacts that are anticipated based on the analysis done in the context of preparing an environmental assessment.

For each impact, mitigation measures are to be identified and listed. Estimates are made of the cost of mitigation actions broken down by estimates for installation (investment cost) and operation (recurrent cost). The ESMP format also provides for the identification of institutional responsibilities for the operation of mitigation devices and methods.

To keep track of the requirements, responsibilities, and costs for monitoring the implementation of environmental mitigation identified in the analysis included in an environmental assessment for Moderate Risk projects, a monitoring plan may be useful. Like the ESMP, the project cycle is broken down into two phases (construction and operation). The format also includes a row for baseline information that is critical to achieving reliable and credible monitoring. The ESMPs/ESMP Checklists will be prepared based on the bidding structure of the MoEUCC. ESMPs will be prepared for rooftops and ESMP Checklist will be prepared for car parks possible and environmental and social impacts will be identified and mitigation measures will be implemented and monitored. The monitoring and progress reports for implementation of the ESMPs will cover all the buildings to be installed PV panels, where necessary.

Full ESMP/ESMP Checklist will be prepared as a stand-alone document for each sub-project depending on the type. The content of the ESMPs will include the following:

a) Executive summary

- Concisely discusses significant findings and recommended actions.

b) Legal and institutional framework

- Analyzes the legal and institutional framework for the project, within which the environmental and social assessment is carried out, including the issues set out in ESS1.

c) Project description

- Concisely describes the proposed project, its components and activities to be conducted, and the project's geographic, environmental, social, and temporal context, including any offsite investments that may be required (e.g., dedicated pipelines, access roads, power supply, water supply, and raw material and product storage facilities) as well as the project's primary suppliers.
- Consideration of the details of the project indicates the need for any plan to meet the requirements of ESS1 through 10.
- Includes a map of sufficient detail, showing the project site and the area that may be affected by the project's direct, indirect, and cumulative impacts.

d) Baseline data

- Sets out in detail the baseline data that is relevant to decisions about project location, design, operation, or mitigation measures. This should include a discussion of the accuracy, reliability, and sources of the data, as well as information about dates surrounding project identification, planning, and implementation.
- Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions.
- Based on current information, assesses the scope of the area to be studied and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences.
- Takes into account current and proposed development activities within the project area but not directly connected to the project.
- Considers sensitive receptors that may be adversely affected by the project activities

e) Environmental and social risks and impacts assessment.

- Takes into account all relevant environmental and social risks and impacts of the project. This will include the environmental and social risks and impacts specifically identified in ESSs2–8, and any other environmental and social risks and impacts arising as a consequence of the specific nature and context of the project, including the risks and impacts identified in ESS1

f) Mitigation measures

- Identifies mitigation measures and significant residual negative impacts that cannot be mitigated and, to the extent possible, assess the acceptability of those residual negative impacts.
- Identifies differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable.
- Assesses the feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of proposed mitigation measures, and their suitability under local conditions; the institutional, training, and monitoring requirements for the proposed mitigation measures.
- Specifies issues that do not require further attention, providing the basis for this determination.

g) Monitoring

ESMPs will identify monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the environmental and social risks and impacts and the mitigation measures described in the ESMP. Specifically, the monitoring section of the ESMP provides (a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and (b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

h) Appendices

- List of the individuals or organizations that prepared or contributed to the environmental and social assessment.

- References—set out the written materials, both published and unpublished, that have been used.
- Record meetings, consultations, and surveys with stakeholders, including those with affected people and other interested parties. The record specifies the means of such stakeholder engagement that were used to obtain the views of affected people and other interested parties.
- Tables presenting the relevant data referred to or summarized in the main text. List of associated reports or plans.

The ESMP attempts to cover typical core mitigation approaches to civil works contracts with small, localized impacts. It is accepted that the above format provides the key elements of the ESMP to meet World Bank Environmental and Social Assessment requirements under ESS1.

The PIU will provide the construction supervisor with detailed public designs that consider gender-friendly spaces, safe bathrooms and sanitary facilities, and spaces for community activities and considering the special needs of the disabled. Additionally, during civil works, the PIU and the construction supervisor will ensure that the DSI consultant takes the required health and safety measures.

Annex- 4. LAND ACQUISITION AND LAND USE CHECKLIST (sub-project specific checklists will be developed)

GENERAL INFORMATION			
Location of the Subject Plot			
Province			
District			
Quarter			
Plot/Parcel Number			
Ownership Status			
State Treasury □	**Other Public** □	**State Treasury + Other Public** □	
Other Information			
Type of land (indicated on master plan)			
Already in use for educational purposes	□ **Yes** □ **No**		
If yes;			
Active school facility	□ **Yes** □ **No**		
Number of students			
Any decision for demolishing existing education facilities	□ **Yes** □ **No**		
Are there any formal/informal users or non-titled people who are utilizing (inhabiting/doing business or using for other purposes etc.) the proposed site/project locations that will be used for civil work? If yes, please provide how many and for what purposes.	□ **Yes** □ **No**		
Is there any possibility to move out, or close of business/commercial/livelihood activities of persons during construction?	□ **Yes** □ **No**		

APPENDICES	
1	Copy of title deed
2	Satellite image (if any)
3	Photo of plot and surroundings
4	Other documents (if there is any demolishing decision for existing education facilities, etc.)

Annex- 5. SAMPLE OF GRIEVANCE FORM

Reference No	
Full Name	
Please mark how you wish to be contacted (by mail, telephone, or e-mail).	
Province/Town/Settlement	
Date	

Category of the Grievance	
1. On abandonment (public)	
2. On assets/properties impacted by the project	
3. On infrastructure	
4. On decrease or complete loss of sources of income	
5. On environmental issues (ex. pollution)	
6. On Employment	
7. On traffic, transportation and other risks	
9-Other (Please specify):	

Description of the Grievance What did happen? When did it happen? Where did it happen? What is the result of the problem?
What would you like to see happen to resolve the problem?
Although giving a name and address is not compulsory, it should be kept in mind that during the feedback process regarding the grievance, some problems may occur due to a lack of information.

Signature: **Date:**

Annex- 6. SAMPLE OF GRIEVANCE CLOSEOUT FORM

Grievance closeout number:		
Define immediate action required:		
Define long-term action required (if necessary):		
Compensation Required?	[ ] YES	[ ] NO
CONTROL OF THE REMEDIATE ACTION AND THE DECISION		
Stages of the Remediate Action		Deadline and Responsible Institutions
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

COMPENSATION AND FINAL STAGES

This part will be filled and signed by the complainant after s/he receives the compensation fees and his/her complaint has been remediated.

Notes:

[Name-Surname and Signature]

Date: ___ / ___ / _____

Of the Complainant:

Representative of the Responsible Institution/Company
[Title-Name-Surname and Signature]

Annex- 7. RISK CATEGORIES of the WORLD BANK

World Bank classifies projects into one of four categories as low, moderate, substantial and high depending on

- the type, location, sensitivity, and scale of the project, and
- the nature and magnitude of the potential environmental and social risks and impacts.

A subproject will be classified as High Risk if:

- the project is likely to generate a wide range of significant adverse risks and impacts on human populations or the environment. This could be because of the complex nature of the project, the scale (large to very large) or the sensitivity of the location(s) of the project. This would take into account whether the potential risks and impacts associated with the project have the any, some, or all of the following characteristics:
    - long term, permanent and/or irreversible (e.g. loss of major natural habitat or conversion of wetland), and impossible to avoid entirely due to the nature of the project
    - high in magnitude and/or in spatial extent (the geographical area or size of the population likely to be affected is large to very large)
    - cumulative and/or trans-boundary in nature
    - a significant probability of serious adverse effects to human health and/or the environment (e.g. due to accidents, toxic waste disposal, etc.)
- the area likely to be affected is of high value and sensitivity, for example sensitive and valuable ecosystems and habitats (protected areas, National Parks, World Heritage Sites, Important Bird Areas), lands or rights of indigenous people or other vulnerable minorities, intensive or complex involuntary resettlement or land acquisition, impacts on cultural heritage or densely populated urban areas;
- some of the significant adverse environmental and social risk and impacts of the project cannot be mitigated or specific mitigation measures require complex and/or unproven mitigation, compensatory measures or technology, or sophisticated social analysis and implementation;
- there are concerns that the adverse social impacts of the project, including the risk of political capture of project benefits, and the associated mitigation measures, may give rise to significant social conflict;
- there is a history of unrest in the area of the project or the sector, and there may be significant concerns regarding the activities of security or other armed forces;
- the project is being developed in a legal or regulatory environment where there is significant uncertainty or conflict as to jurisdiction of competing agencies, or where the legislation or regulations do not adequately address the risks and impacts of complex projects or changes to applicable legislation are being made, or enforcement is weak;
- the past experience of the Borrower and/or the implementing agencies in developing complex projects is limited, and their track record regarding environmental and social issues generally is poor;
- stakeholder engagement, especially community participation in the project area, is weak; or
- there are a number of factors outside the control of the project which could have a significant impact on the environmental and social performance and outcomes of the project.

A subproject will be classified as Substantial Risk if:

- the project is not as complex as high risk projects, its scale is smaller (large to medium) and the location is not in such a sensitive area. This would take into account whether the potential risks and impacts have the any, some or all of the following characteristics:
    - mostly temporary, predictable and/or reversible, and the nature of the project does not preclude the possibility of avoiding or reversing them (although substantial investment and time may be required);
    - medium in magnitude and/or in spatial extent (the geographical area and size of the population likely to be affected are medium to large);

    - the potential for cumulative and/or trans-boundary impacts may exist, but they are less severe and more readily avoided or mitigated than for High Risk projects;
    - medium to low probability of serious adverse effects to human health and/or the environment (e.g. due to accidents, toxic waste disposal, etc.), and there are known and reliable mechanisms available to prevent or minimize such incidents;
- the effects of the project on areas of high values or sensitivity will be lower than High Risk projects;
- mitigatory and/or compensatory measures that may be designed more readily and be more reliable than those of High Risk projects.

A subproject will be classified as Moderate Risk if;

- the potential adverse risks and impacts on human populations and/or the environment are not likely to be significant. This is so because the project is not complex and/or large, does not involve activities that have a high potential for harming people or the environment, and is located away from environmentally or socially sensitive areas. As such, the potential risks and impacts and issues are likely to have the following characteristics:
    - predictable and expected to be temporary and/or reversible;
    - low in magnitude;
    - site-specific, without likelihood of impacts beyond the actual footprint of the project;
    - low probability of serious adverse effects to human health and/or the environment (e.g. do not involve use or disposal of toxic materials, routine safety precautions are expected to be sufficient to prevent accidents, etc.); and
- risks and impacts can be easily mitigated in a predictable manner.

A subproject will be classified as Low Risk if:

its potential adverse risks and impacts and issues on human populations and environment are likely to be minimal or negligible and are less than those in projects classified as moderate risk. These projects, with few or no adverse risks and impacts and issues, will not require further environmental and social assessment.

Annex- 8. REQUIREMENTS AND MEASURES WHEN HANDLING ASBESTOS

Health and Safety Measures in Working with Asbestos Regulation

Article 7 Dismantling, demolition, repair, maintenance, and removal tasks

(1) Employers need to take measures before demolition, repair, maintenance, and removal work, regarding asbestos materials. Moreover, they should inspect the location of amenities, buildings, ships, and similar structures and systems. Law No. 25406 dated 18/3/2004 and published in the Official Gazette concerning the demolition applies to the relevant provisions concerning the excavation soil-, construction- and demolition waste control. This regulation applies if the employer suspects the existence of asbestos or materials containing asbestos in a construction or environment in which it operates. (2) The employer shall ensure that activities such as dismantling, demolition, repair, maintenance, and removal of asbestos-containing materials are performed under the guidance of experts and by the same workers as referred to in Article 8. (3) Besides the measures from Article 11, the employer should take the following measures for the protection of workers in case that the airborne asbestos concentrations exceed the limits as described in Article 11 of this law; a) The determination of the respiratory and other personal protective equipment, the determination of the protection of workers and working hours. b) The warranty of warning signs in places that exceed the limit values. c) Prevention of the spreading of dust from asbestos or asbestos-containing materials at facilities of the work area. (4) Before starting the work as specified in this Article, measures need to be taken in respect of informing workers or their representatives and asking for their views.

Asbestos removal and cleaning should be carried out under the supervision[15] of at least one Asbestos Removal Specialist, together with the number of Asbestos Removal Employees that will be determined depending on the time and need. Seasonal conditions should be taken into consideration when planning the removal.

Actions to be taken and Legal Requirements before Starting Removal

1. Determination of asbestos parts of buildings
2. Determining the type of asbestos
3. Preparation of action plan and organizational structure
4. Assigning of the Occupational Safety Specialist (construction sites are classified as very dangerous class according to the nace code)
5. Preparation of a risk assessment
6. Preparation of asbestos risk analysis
7. Photographing the current situation of the construction site
8. Determining the required number of workers with Asbestos Removal Certificate and their duties
9. Assigning of Asbestos Removal Specialist
10. Social Security Institution (SSI) entries, medical checks (including working at height and respiratory function tests), completion of occupational safety training, and ensuring that these trainings are documented or checking the relevant documents.
11. An asbestos removal expert will prepare and review the documents and files.
12. Notifying the Provincial Directorate of Turkish Employment Agency and Ministry of Family, Labor, and Social Services

Site Preparation Before Removal of Asbestos

A – Preparation of Sections Where Asbestos Removals Perform

[15] Health and Safety Measures in Working with Asbestos Regulation, Official Gazette date: January 259, 2301385, No: 2

If there is a place where quarantine is needed, this area must be sealed. Establishment of purification cabinets: Purification cabinets should contain showers. Asbestos removal workers must be cleaned at every break.

Security signs and warning notices of the zone should be secured, and isolated, only authorized workers should be allowed to enter the area.

B – Required Materials and Personal Protected Equipment

1. A sufficient number of sealed overalls (Types 5-6)
2. A sufficient number of dust masks, FFP3, or full-face masks for personnel
3. A sufficient number of impermeable gloves for personnel
4. Special tapes
5. Specially sealed foils and/or asbestos bags-waste bags (big bags)
6. Filtered industrial dust vacuum cleaner
7. Chemical fluid and application device (special fiber bonding fluid)
8. Suitable safety shoes, hard hat, and/or helmet
9. Seat belts
10. Special PPEs and equipment are suitable for the environment/performed activity.
11. Security tapes and security plates
12. First aid equipment

Removal of Asbestos Containing Materials by Encapsulation and Separation

Separating termites and/or contaminated materials properly without generating dust and breaking the parts as much as possible. In addition, before starting to cut, the chemical adhesive liquid must be sprayed on the relevant area to trap the dust. It is ensured that the cut and removal parts are placed in specially sealed foils and/or asbestos sacks by squeezing the adhesive liquid (big bag), packaged and labeled, and then placed in the intermediate storage area designated by the DSI consultant before disposal.

Required Actions Following the Removal

1. When required, clean all areas with a filtered industrial-type cleaning machine indoors, moistening if not necessary,
2. Wet cleaning with chemicals and/or non-chemical material
3. Spraying all surfaces with a special liquid material containing fiber adhesive

Regulation on Waste Management

Renovation, and demolishing related asbestos waste would be resulted from building wastes containing asbestos. Asbestos-containing wastes will be disposed of in line with the Regulation on Waste Management.

Annex 4. Waste List of Regulation on Waste Management

Waste Code		Waste Code Definition	Remark
	17 06	Insulation and construction materials containing asbestos	
	17 06 01	Insulating materials containing asbestos	M*
	17 06 05	construction materials containing asbestos	M

* M mark: The sign in the "Remark" column is in line with the six-digit waste code indicating that the waste is possibly hazardous. To determine whether the wastes marked in this way are dangerous or not, a study is carried out to determine the hazardous properties of the waste stipulated in Article 11 of the Waste Management Regulation.

Article 11 of Waste Management Regulation[16]

(1) The list of wastes within the scope of this Regulation is given in Annex-4. Wastes marked with (*) in the waste list are hazardous waste. Hazardous wastes are wastes having one or more of the features listed in Annex-3 / A. Wastes marked (A) in the waste list are classified as hazardous waste regardless of the hazardous waste concentration included in Annex-3 / B. The hazardous properties of wastes marked with (M) must be determined. In studies to be carried out for this purpose, evaluations regarding H3[17]-H8 and H10 and H11, among the features listed in Annex-3 / A, are made based on the concentration values in Annex-3 / B.

(2) Wastes in the waste list are defined with six-digit waste codes and the relevant two-digit and four-digit section codes.

(3) It is obligatory to use the six-digit waste code corresponding to the definition of waste in full in all studies related to waste.

(4) The waste list and guidelines for determining the hazardous properties of wastes are prepared by the Ministry.

(5) Material safety data sheet (MSDS), process inputs and information, and analysis studies based on the guidelines published by the Ministry or the concentration values in Annex-3 / B are used in the studies to determine the hazardous properties of the wastes. If deemed necessary by the Ministry, analysis is made by the waste producer or waste owner based on the concentration values in Annex-3 / B. Analysis studies are carried out by laboratories that have been qualified for Annex-3 / B from the Ministry.

(6) The results of the analysis studies conducted to determine the hazardous properties of wastes are valid for 5 years if there is no change in the production process, raw materials or additives. However, if the Ministry deems it necessary, the analysis work is renewed. In case of a change in the production process, raw materials, or additives, the analysis is renewed within 3 months after the change.

Legal Disposal Requirements

According to the Regulation on Waste Management, the implementation of the disposal process should be controlled. The materials containing asbestos will be labeled and stacked appropriately. In the online programs of the Ministry of Environment and Urbanization, using the waste management application over the Integrated Environmental Information System, it will be ensured that hazardous materials containing asbestos are sent to licensed disposal facilities.

Disposal of Asbestos Wastes

- Asbestos wastes must be wrapped and packed without breaking.
- Asbestos wastes should be labeled after being packed without breaking.
- Asbestos wastes should be sent to the licensed disposal facility following the completion of online registration
- Asbestos wastes should be sent to the disposal facility by licensed vehicles.

[16] https://cygm.csb.gov.tr/yonetmelikler-i-440

[17] **Properties of waste which render them hazardous**
H1 Explosive
H2 Oxidizing
H3-A Highly flammable
H3-B Flammable
H4 Irritant
H5 Harmful
H6 Toxic
H7 Carcinogenic
H8 Corrosive
H9 Infectious
H10 Teratogenic
H11 Mutagenic

- Asbestos wastes cannot be dumped into areas designated for excavation materials or dumping sites.
- Asbestos wastes cannot be dumped along streams.
- Asbestos waste cannot be burned.
- Asbestos wastes cannot be stored (disposed of) in any area except in 1st class storage facilities (see related regulation on temporary storage).

Annex- 9. WASTE MANAGEMENT PLAN

1. Purpose and Scope

The PUMRE Project has been initiated by the Directorate General of Construction Affairs (GDCA) of the Ministry of Environment, Urbanization and Climate Change (MoEUCC), to improve the energy efficiency performance of central government buildings in Türkiye through the installation of solar PV panels.

The Waste Management Plan is developed for the Project to set out the primary applicable requirements associated with waste management in compliance with related national legislation and World Bank Environmental and Social Framework and its associated Environmental and Social Standards (ESSs). The plan will be applied during the construction phase of the Project.

Throughout the Project life, different types of wastes and materials will be generated from different sources and activities. The purpose of this plan is to guide and obtain the acceptable collection, segregation, storage, handling, transportation, and disposal of non-hazardous and hazardous wastes generated from the Project activities in a way that minimizes the impacts on human health and the environment, including minimization of loss of valuable reusable/recyclable materials.

The Plan complies with national legislation, requirements of Resource Efficiency, Pollution Prevention and Management ESS3, and other applicable Good International Industry Practices (GIIPs). The plan will be applied systematically during the lifetime of the Project, in conjunction with the following related management plans and programs:

- Environmental and Social Management Plan (ESMP)
- Environmental and Social Commitment Plan (ESCP)
- Labor Management Procedure (LMP)
- Community Safety and Traffic Management Plan
- Method statement for environmental aspects
- Pollution prevention plan
- Occupational Health and Safety Plan (OHS); and
- Stakeholder Engagement Plan (incl. grievance mechanism);

This Plan is a living document, and the responsibilities, procedures, and compliance actions should be updated as appropriate.

2. Legislative Requirements and Standards

1.1. National Legislation

The Environmental Law (No. 2872), which was published in the Official Gazette No. 18132 dated August 11, 1983, provides the legislative framework for the regulation of industries and their potential impact on the environment. Industrial projects are subject to varying levels of review that begin while projects are in the development phase. Additional regulations apply to facilities once they are in operation.

The Environmental Law authorized the promulgation of several regulations. Those that pertain to waste management and the Project must comply with are described below.

1.1.1. Regulation on Waste Management

The Regulation on Waste Management is the implementing legislation aimed at aligning with the EU Waste Framework Directive. The Regulation was published in the Official Gazette No. 29314 dated April 2, 2015.

The Regulation on Waste Management provides a single comprehensive framework for waste management. As of April 2015, it repealed and replaced the Regulation on Solid Waste Management and the Regulation on General Principles of Waste Management. As of April 02, 2016, it also repealed and replaced the Regulation on Control of Hazardous Wastes.

Article 9 of the Regulation stipulates the responsibilities of the waste generators and waste owners, including:

- Implementation of necessary measures to minimize waste generation;
- Preparation and submission of waste management plan regarding generated wastes (with prevention and minimization measures);
- Declaration of annual waste generation via the web-based system of the Ministry of Environment, Urbanization and Climate Change and use of National Waste Transport Form for wastes that require its use (template is provided in Annex 9-A of the Hazardous Waste Control Regulation which is repealed and replaced by Regulation on Waste Management).

1.1.2. Regulation on Control of Excavation, Construction, and Demolition Wastes

Regulation on Control of Excavation, Construction and Demolition Wastes was published in Official Gazette No. 25406 dated March 18, 2004. Articles 10, 34, 35, 36, 37, 38, 39, 40, 41, and 42 regarding the storage of the wastes were repealed by the Landfill Regulation published in Official Gazette No.27533 dated March 26, 2010.

This regulation aims to set the principles and procedures to minimize excavation, construction, and demolition waste at the source of generation, as well as to collect, temporarily store, transfer, recycle, reuse, and dispose of waste, in an environmentally sound manner.

By Article 9 of the regulation; excavation, construction, and demolition generating facilities are obliged to implement waste management in a way that will minimize the adverse effects of waste on the environment and human health. The facilities must acquire the necessary permissions that concern the generation, transportation, and storage operations of waste. The facilities are not allowed to dump construction wastes on the sites/locations and facilities other than the permitted ones by the municipal or other authorities.

The regulation also stipulates that the project owner is responsible for having precautions to minimize noise impacts, visual impacts, and dust emissions during the removal of excavation material. The operation area must also be enclosed. In addition, planning should be done in a way that the amount of excavated soil is equal to the filling volume. Excavated soils must be utilized within the

operation Area to the extent possible.

1.1.3. Packaging Waste Control Regulation (PWCR)

PWCR was published in the Official Gazette No. 28035 dated August 24, 2011, and also updated and published in the Official Gazette No: 31523 dated June 26, 2021. The regulation aims to;

- Provide certain environmental criteria, requirements, and characteristics for packaging production,
- Prevent direct and indirect disposal of packaging wastes causing environmental damage, and
- Prevent and minimize the generation of package waste through reuse, recycling, and recovery methods.

PWCR states that the packaging wastes should be collected and stored separately from other wastes at the source to ensure their disposal without causing any environmental damage; to reduce environmental pollution; to benefit from the landfills at maximum levels; and to contribute to the economy.

Packaging waste-generating parties located in the boundaries of municipalities that conduct separate collection at source are obliged to deliver the packaging wastes to the responsible municipalities or their contracted and licensed collection/separation entities.

1.1.4. Waste Batteries

Waste Batteries and Accumulators Control Regulation was published in Official Gazette No. 25569 dated August 31, 2004. The purpose of this Regulation is;

- Arrange legal and technical principles for the development of policies and programs for batteries and accumulators from their production to their final disposal,
- Ensure production of batteries and/or accumulators with certain criteria and basic conditions and characteristics in terms of the environment,
- Prevent discharge to the receiving environments,
- Ensure technical and administrative management standards are in place, and
- Establish a collecting system for the recovery and final disposal of used batteries and accumulators.

According to the Regulation, battery, and accumulator consumers are obliged to;

- Collect used batteries separately from household wastes,
- Deliver used batteries to the collection points established by municipalities or enterprises that are engagedin the distribution and sales of battery products,
- Deliver the old accumulators to the temporary storage facilities established by the enterprises engaged in the distribution and sale of accumulator products and enterprises operating vehicle maintenance/ repair sites (accumulators cannot be delivered over 90 days once they are out of use),
- Pay a deposit if a new accumulator is to be purchased when delivering the old one and
- Ensure impervious ground and other required conditions are met for the temporary storage sites where batteries and accumulators will be stored,

1.1.5. Waste Oils Management Regulation (WOMR)

WOMR was published in the Official Gazette No. 26952 dated June 30, 2008, also updated and published in the Official Gazette No. 32071 dated January 12, 2023. The purpose of the WOMR is:

- To prevent direct and indirect disposal of waste oils in the environment;

- To ensure temporary storage, transportation, and disposal thereof without causing harm to the environment andhuman health;
- To set up necessary technical and administrative standards in the management of waste oils;
- To determine the required principles and programs to establish temporary storage, handling, anddisposal facilities and
- To manage these facilities in an environmentally friendly manner.

According to Article 9 of WOMR, waste oil producers are obliged to take the required measures to minimize the generation of waste oils, including waste motor oils and residues resulting from the processing of waste oils. Waste oil producers must conduct waste oil analyses and declare generated amounts to the Ministry of Environment, Urbanization, and Climate Change. Waste oil from different categories should not be mixed with other hazardous wastes.

Waste oil producers shall comply with the provisions of the Regulation on Waste Management for disposal. All records including waste oil declaration forms and analysis reports are required to be kept for at least five years. To transport waste oils, the regulations that will be determined by MoEUCC shall be complied with.

Waste oil is required to be collected in red colored tanks/containers with a label of "Atık Yağ" ("Waste Oil") on it as stated in Annex-6/Article 6. The containers are placed in storage with provisions for protection from rain, as well as the impermeable ground (a thickness of at least 25 cm and covered by epoxy, geo membrane, and similar insulation materials).

1.1.6.Regulation on Control of Waste Electrical and Electronic Equipment

The regulation was published in the Official Gazette No. 28300 dated May 22, 2008, and also updated in the Official Gazette No: 32055 dated December 26, 2022. One of the main purposes of the Regulation is to identify the methods and targets regarding the minimization of electrical and electronic waste generation through reuse, recycling, and recovery.

3. Requirements of World Bank ESF

Regulation on General Principles of Waste Pre-treatment and Recycling Facilities

The regulation was published in Official Gazette No. 31623 dated October 09, 2021. It is to determine the procedures and principles regarding the technical criteria of the waste pre-treatment and recovery facilities operating for the processing of wastes and the minimum requirements to be found in these facilities.

3.1. Resource Efficiency, Pollution Prevention, and Management ESS3

ESS3 recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services, and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention, GHG emission avoidance, and mitigation technologies and practices have become more accessible and achievable.

This ESS sets out the requirements to address resource efficiency and pollution[18] prevention and

[18] The term "pollution" is used to refer to both hazardous and nonhazardous chemical pollutants in the solid, liquid, or gaseous phases, and includes other components such as thermal discharge to water, emissions of short- and long-lived climate pollutants, nuisance odors, noise, vibration, radiation, electromagnetic energy, and the creation of potential visual impacts including light.

management[19] throughout the project life cycle consistent with Global International Industry Practice (GIIP).
Resource Efficiency and Pollution Prevention and Management Standard's objectives are provided below:

- To promote the sustainable use of resources, including energy, water, and raw materials.
- To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.
- To avoid or minimize project-*related* emissions of short- and long-lived climate pollutants.
- To avoid or minimize the generation of hazardous and non-hazardous waste.
- To minimize and manage the risks and impacts associated with pesticide use.

3.2. European Union (EU) Legislation

Directive 2008/98/EC (the Waste Framework Directive) provides general provisions for waste management and sets the basic waste management definitions. It requires that waste is managed without endangering human health and harming the environment, and in particular without risk to water, air, soil, plants, or animals, without causing a nuisance through noise or odors, and without adversely affecting the countryside or places of special interest. The Directive amended the former EU directive on waste, hazardous waste, and waste oils and is currently covering all wastes identified by Decision 2000/532/EC (i.e. the European Waste Codes).

To harmonize Turkish environmental protection standards with the EU's Waste Framework Directive (2008/98/EC) and the European Commission Decision establishing a list of waste (2000/532/EC), the Turkish MoEUCC adopted a new regulation on waste management that will significantly affect companies that producewaste in Türkiye. Waste management implementing legislation aimed at aligning with the Waste Framework Directive was adopted in 2015. Currently, waste codes provided in Annex 4 of the Turkish Regulation on Waste Management are entirely the same as the European Waste Codes.

[19] Unless otherwise noted in this ESS, "pollution management" includes measures designed to avoid or minimize emissions of pollutants, including short- and long-lived climate pollutants, given that measures which tend to encourage reduction in energy and raw material use, as well as emissions of local pollutants, also generally result in encouraging a reduction of emissions of short- and long-lived climate pollutants.

4. Roles and Responsibilities

Roles and responsibilities for Environmental and Social (E&S) management for the Project are described in detail in the Project ESMF. Within this scope, roles and responsibilities regarding waste management are provided in Table 1.

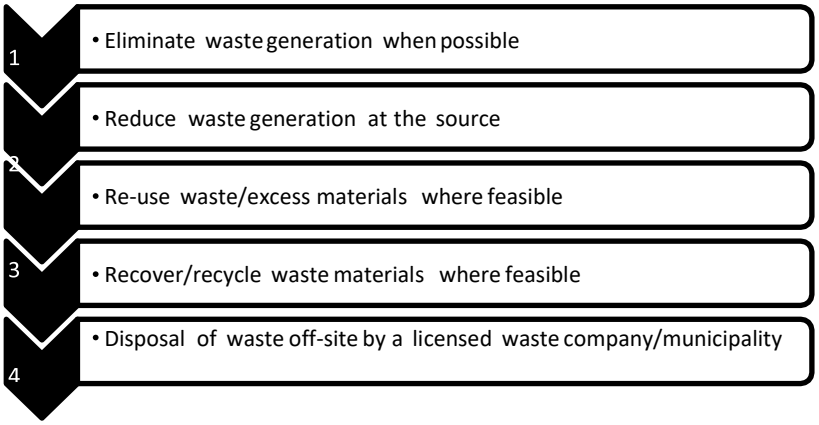
Table 1 Roles and Responsibilities

Roles	Responsibilities
Project Implementation Unit (PIU)	• Ensure adequate resources are provided for the implementation of this Plan. • Ensure the specific provisions of the plan is a part of all sub-project-specific ESMPs.
Feasibility Study Consultant	• As required, review and update the Plan •
Supervision Consultant	• Ensure technical support is provided to DSI Consultant for the implementation of the Plan. • Ensure related trainings are provided by the DSI Consultant, through a review of training records and related training documents. • Oversee DSI consultants' HSE compliance with Project requirements through DSI consultant monitoring and reports.
DSI Consultants	• Ensure this plan is implemented in line with Project standards • The main responsibility for ensuring the implementation of the Plan (including by the Sub-Contractors if any) and reporting non-compliances and implementation performance of the Plan to the supervision consultant. • As required (e.g. in the case compliance is identified, a change in applicable legislation occurs, etc.), participate in the development of corrective and/or enhancement actions. • Provide related trainings. • Conduct internal audits and daily inspections and record identified in compliance. • Ensure related non-compliances are recorded and responded to immediately. As required, review and update the Plan (in coordination with the supervision consultant). • Ensure waste management issues are included in the daily checklist to be integrated into the monthly report to be submitted to PIU.
All personnel	• Participate in trainings required for waste management. • Ensure self-competency in terms of the implementation of this plan.

5. Waste Management

5.1. Waste Management Approach

The Waste Framework Directive (Directive 2008/98/EC) provides a waste hierarchy, which lays down priorities for the best overall environmental option in applicable waste legislation and policy. The EU waste hierarchy will also be the hierarchal approach of the Project. Within this scope, the management of wastes will be based on the following, in the order of decreasing preference:



In order to minimize and appropriately manage the waste generated on-site, the following good management practices will be used:

- Reduction of waste generation (through management practices, avoiding or decreasing materials use, etc.) is the primary goal of this plan.
- Non-hazardous wastes will be segregated from hazardous wastes.
- Recycling of wastes will be mandatory throughout all Project activities and related trainings will be provided.
- Wastes to be sent to licensed recycling/recovery firms will be segregated by type.
- An effort will be made to minimize the number of hazardous materials used.
- Personnel that handles hazardous materials and wastes, will be trained for proper handling and management.
- Spills of hazardous materials will be prevented through careful and sensible management of the materials.
- Where possible, non-hazardous alternatives will be used in place of hazardous materials.
- Regular inspections of storage areas will be conducted. If damaged or leaking containers are detected, theywill be replaced.
- Preventive maintenance will be performed on equipment to avoid potential spills.
- Waste storage areas will have secondary containment or spill trays.
- Under no circumstances, waste will be disposed o f on-site.

5.2. Classification of Wastes

The Project activities will lead to the generation of various non-hazardous and hazardous wastes.

5.2.1. Non-Hazardous Wastes

Typical non-hazardous wastes are given below;

- Domestic waste,
- Recyclable wastes (e.g. paper, glass, metals, wooden waste, trees, tin cans, textiles, etc.),
- Packaging waste,
- Waste tires, and
- Excavation waste.

5.2.2. Hazardous Wastes

Different types of hazardous wastes, that may potentially be generated as a result of the project activities, are given below:

- Waste batteries and accumulators,
- Waste vegetable oil,
- Medical waste,
- Waste oil (from maintenance of equipment and vehicles, transformers, etc.),
- Waste paint,
- Other hazardous waste related to operation and maintenance (O&M) activities, and
- Materials that came into contact with hazardous materials (including pesticide containers).

5.3. Implementation

5.3.1. Waste Collection, Storage, Transportation and Disposal

In line with the legal requirements, an industrial (hazardous and non-hazardous) waste management plan will be prepared and submitted to the PDoEUCC.
In addition, by the end of March of each year, the waste declaration form must be completed with the previous year's information and these forms must be submitted to the MoEUCC digitally.

5.3.2. Collection, Segregation and Storage

Wastes will be segregated and temporarily stored in designated secured storage areas separately defined for hazardous and non-hazardous wastes.

Non-Hazardous Wastes

Management of non-hazardous wastes will be as follows:

- Domestic wastes will be collected in special trash bins and temporarily stored onsite in compliance with the Regulation on Waste Management.
- Recyclable wastes will be separated and stored temporarily onsite in reserved areas.
- Packaging wastes will be collected separately and temporarily stored onsite in reserved areas in compliance with Packaging Waste Control Regulation.
- Suitable waste containers will be provided at the places of waste generation to facilitate safe and environmentally sound temporary storage. All containers will be marked according to contents.

Hazardous Wastes

Management of hazardous wastes will be as follows:

- In accordance with international standards and international common practice, hazardous wastes will be stored in containers that are non-damaged, leak-proof, safe, and appropriate. In line with related legislation, a dedicated area with a concrete floor will be used for storage.
- All waste containers that are being handled will have clear identification and accurate description of the type of waste. This will provide information to the site and external personnel for the safe handling and transfer of waste. Any unidentified waste will be considered hazardous waste. Waste labels will include information such as waste classification/category, the volume of waste, MSDS, and required PPEs. Any old labeling on the containers will be removed or covered to avoid confusion.
- The hazardous waste containers will be checked regularly, to determine whether they are damaged, or if any spillage has occurred.
- Hazardous waste containers will be kept closed and wastes will be stored in a way that they will not have chemical reactions.
- Vehicles and construction machinery will be used during the land preparation, construction, and closure phases of the Project. Maintenance (e.g., oil change, battery change, etc.) of machinery and equipment is planned to be performed outside of the Project Area, at qualified service providers. In case it is inevitable to perform an oil change, battery change, tire change, etc. site, reserved areas for this work (with appropriate drainage) will be used. An impermeable cover will be laid under vehicles to prevent soil contamination and this activity will be conducted away from the water resources. When any oil/fuel/lubricant spill or leakage occurs at the site, the contamination will be controlled by using absorbents and the contaminated soil (if any) will be stripped to an adequate depth and stored also as hazardous waste.
- Absorbent material will be kept in all the vehicles used for transportation against any leakage or spill. Information will be given to workers on the use and disposal of materials. Filters or materials saturated with petroleum products will be drained into an appropriate container to remove any free product before disposal.
- Waste oils will be temporarily stored, handled, and disposed of in separate containers, according to the categories referred to in the Waste Oil Management Regulation. Waste oil will be collected inside the containers and placed on an impermeable surface. Different containers will be used for waste oils of different categories. Waste oil temporary storage containers will have a “Waste Oil” sign on.
- Waste vegetable oils will be collected in special containers temporarily.
- Discharge of the waste oils to receiving environments or lavatories/sinks will not be allowed.
- Waste batteries and accumulators will be collected and stored separately in compliance with Waste Batteries and Accumulators Control Regulation.
- Project vehicle maintenance will be conducted off-site. However, in case the tires of vehicles and the construction machines need to be changed, the changed tires will be kept in special reserved places in line with End-of-Life Tires Control Regulation
- The Project activities do not require the use of explosives. However, if required, waste explosives will be stored in their original type of container but marked as explosive waste and will be transported by licensed firms.

5.3.3. Transportation and Disposal

Non-Hazardous Waste

The following management controls will be in place for the transport and recycling, recovery and disposal of non-hazardous wastes:

- A protocol will be signed with the related municipality for the transfer of domestic wastes to the sanitary landfill.
- Agreements will be signed with licensed firms for the transport of segregated recyclable and packaging wastes.
- The portion of excavation waste that cannot be reused on-site will be transported to excavation, construction, and demolition disposal areas approved by the respective municipality as mentioned above. This must comply with the Excavation, Construction, and Demolition Waste Control Regulation.
- Agreements of the Company with licensed waste facilities will be annexed to this MP.

Hazardous Wastes

The following management controls will be in place for the transport and reuse, recovery, recycling, and disposal of hazardous wastes:

- Hazardous wastes will be transported off-site when the storage on site nears maximum storage capacity levels. Hazardous waste will be securely packed and labeled before removal from the site to ensure the waste can be transported safely to the approved disposal site without risk to those handling the waste or to the environment.
- Separately collected waste batteries and accumulators will be delivered to the collection points established by enterprises engaged in the recovery, distribution, and sales of battery products; or by municipalities.
- Waste tires will be delivered to licensed transportation, recycling, or reuse (as fuel) companies.
- As mentioned above, this project does not require medical waste but if required, it will be sent to a nearby healthcare facility or a medical waste disposal firm, under the supervision of the workplace doctor.
- Waste oils will be transported by licensed transporters to the licensed processing and disposal facilities. National Transportation Form will be filled before transportation and the waste oil declaration form will be submitted to relevant authorities annually.
- Waste vegetable oils collected in special containers will be sent to licensed companies for reuse/ recovery.
- Licensed disposal facilities will be used for the transfer and disposal of other hazardous wastes.
- Agreements of the Company with licensed waste facilities will be annexed to this MP.

6. Monitoring and Reporting

The waste types, the amount collected of each type, and waste classifications, will be recorded monthly. Records of generated waste from the time of generation to the final destination will be maintained. A sample waste log form for this purpose is provided in Annex 1.

Annual waste declaration forms (online web-based system of the MoEUCC http://online.cevre.gov.tr) and National Waste Transport Forms (template is provided in Annex 9-A of the Hazardous Waste Control Regulation which is canceled on April 02, 2016.) will be kept for 5 years onsite.

Daily inspections regarding the on-site management of wastes will be conducted during the construction and operation phases. A sample checklist for subjects to be covered during inspections is provided in Annex 2. In addition to these inspections, internal audits will be conducted quarterly during the

construction phase. Results of inspections and monitoring will be provided to the supervision consultant/PDoEUCC, as well as to World Bank within the scope of biannual reporting.

Based on monitoring and audit results, corrective and/or enhancing actions will be designed and implemented. The performance of these actions will also be monitored and reported.

7. Training

DSI Consultants will ensure sufficient training is provided to all personnel (including sub-contractor's personnel if any). The scope of the training will ensure that workers can fulfill their waste management roles and functions through awareness of relevant aspects of this plan, related legislation and standards, and general waste management practices (e.g. tidiness, waste segregation, etc.).

Training details (e.g. participants, subjects, training hours provided, etc.) will be recorded and the records will be kept on-site. Personnel working routinely with hazardous wastes and materials will receive additional specialized training detailing the specific handling, segregation, labeling, storage, spill response, and disposal requirements.

8. Review and Update

This Plan is a living document, and the responsibilities, procedures, and compliance actions shall be updated as required (e.g. after a change in related legislation). It is the responsibility of supervision consultants and DSI consultants to be fully aware of its contents. The DSI consultant is to provide relevant training to staff and to ensure that measures/commitments are being implemented to achieve compliance with this Plan.

ANNEX- 1. Waste Log Form

Month: Waste Log Form No:

No	Date	Type (Hazardous/ Non-hazardous)	Sub-type	Waste (ton or m^3)	Transporter	Disposer	Disposal Method
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

ANNEX- 2. Waste Management Inspection Checklist

Inspection Date:

Inspection Location:

Control Measure	Compliance (Yes/No)	Comment
Are all waste streams being properly separated and labeled into the following categories? - Hazardous Waste - Non-hazardous waste		
Is the site waste inventory current and up to date?		
Are hazardous and non-hazardous wastes stored at separate locations?		
Has a map been produced showing the correct waste storage locations which are visible to all workers		
Are all waste storage containers appropriately labeled to prevent cross-contamination of waste materials?		
Are all waste labels complete and include the appropriate information? - Waste stream (Hazardous, non-hazardous, etc.) - Type of waste (solid, liquid, or sludge) - Amount of waste - Known environmental, health, and safety hazards (e.g. MSDS forms) - Personal protection equipment (PPE) required		
Are licenses of companies contracted for waste transport and waste disposal valid and up-to-date?		

Annex- 10. CHANCE FIND PROCEDURE

1. INTRODUCTION

Increasing the capacity of the Public and Municipal Renewable Energy Project (PUMREP) will enable a stronger transmission system and help expand the scope of automated controls, improve management and protect the stability of the building structure and prevent widespread sizable disruptions, which require protection systems. On the other hand, Natural and Archaeological Sites, Cultural and Historical Buildings will certainly not be included in the Project. This project will be carried out on the car parks and rooftops of the existing public and universities' buildings. However, during the project implementation, there will also be the possibility to encounter certain chance finds –historical and cultural assets- that shall be registered.

1.1. SCOPE

The scope of this document is to provide a summary of a chance to find management actions, procedures and responsibilities in the event of encountering any such assets during project construction activities.
This procedure is for all project activities (such as construction and installation etc.) in the project impact zone as well as in other project-related areas.

1.2. DEFINITIONS

CHANCE FIND	*'Chance find' defines any potential objects, features or areas of cultural inheritance that have been defined as a result of regular monitoring of project-related construction works but extrinsically to an official site survey.*
MUSEUMS	
REGIONAL CONSERVATION BOARDS	
PROJECT	
WORK TO BE DONE	
AND MANDATED ACTIONS	
COMPULSORY WORK	

1.3. ABBREVIATIONS

Acronym	Definition
E&S	Environmental and social
GDCA	General Directorate of Construction Works

1.4. REFERENCES

STANDARDS, LEGISLATION, AND LAWS
Ministry of Culture and Tourism, Law No. 2863 on the Protection of Cultural and Natural Assets
Ministry of Culture and Tourism, Decree No. 658, Archaeological Sites, Conditions for Protection and Use

2. ROLES AND RESPONSIBILITIES

Directorate General of Construction Affairs (GDCA) shall be responsible to prepare and implement management plans and procedures based on project-specific environmental and social impact analyses. Furthermore, GDCA shall also be liable, together with all its units and DSI Consultants, to act in observance of these procedures during project construction activities. All construction staff shall be trained given the implementation of the procedure.

The Role of the Project	Responsibilities
Site Manager	Ensure that Environmental and Social (E & S) issues are handled sufficiently and as required by all units concerned. To support on-site support to E & S actions, to provide E & S monitoring and supervision, and to allocate adequate resources there too.

3. CHANCE FIND PROCESS

The step-by-step process to follow any chance found in the project site and its area of impact is given in the Table below.

Table 1 Chance Find Procedural Steps to follow

STAGE 1 - **Following a chance find:**
All works in the survey area shall cease.
Transitional buffer zones shall be established around the chance to find the area.
Site management and the museum archaeologist shall be contacted immediately.
The area of the finding shall be adequately secured by markings, signposts, and banners, etc.
Protection of the site the chance finding shall not be transported lifted or damaged further.

<table>
<tr><td colspan="2">STAGE 2 – Registration

Chance Find Notification Form Section A shall be filled in and a copy shall be forwarded to the site manager in 24 hours.</td></tr>
<tr><td colspan="2">STAGE 3 - Communication with local authorities

The director of the respective museum shall be notified regarding the chance find.</td></tr>
<tr><td colspan="2">STAGE 4 - Museum Decision

The archaeologist of the museum concerned shall decide on actions to follow in the chance to find the site.</td></tr>
<tr><td>STAGE 4A - Site or the find is of no significance
Museum archaeologist declares that the site/find is of no significance.

Site supervisor notifies respective authorities.</td><td>STAGE 4B - Site is significant.

Museum archaeologists declare that the site/find is significant.

The museum director or the archaeologist at the museum decides on further action and notifies the site supervisor.</td></tr>
<tr><td>Site supervisor retains a copy of the chance find for his/her records.</td><td>Site supervisor notifies respective authorities.</td></tr>
<tr><td>No further action is required.

The chance find procedure is closed.

Construction activities can resume/continue.</td><td></td></tr>
</table>

STAGE 5 - **Site survey** Project staff follows the instructions of the archaeologist of the Archaeology Museum concerned.		
Following the site survey, the museum Archaeologist declares that the site is of minor significance. Site supervisor notifies his/her superiors. Site supervisor retains a copy of the chance find for his/her records. No further action is required. The chance find procedure is closed. Construction activities can resume/continue	Following the site survey, the museum archaeologist declares that the site/find is **moderately significant.** More advanced works such as the test pit/recovery excavation or remote sensory surveys shall be completed. The museum archaeologist shall instruct and/or supervise works. Site supervisor notifies his/her superiors. Project management shall provide an archaeological task force under the leadership of the museum archaeologist. The task force shall be composed of qualified archaeologists as well as other specialists and workers. Upon completion of the excavation, the team shall report to the museum management. Museum management forwards the findings of the survey to the Regional Cultural Asset Conservation Board. The Regional Cultural Asset Conservation Board concerned shall officially approve such recovery and notifies the project management duly. Site supervisor retains a copy of the chance find for his/her records. No further action is required. The chance find procedure is closed. ***Construction activities can resume/continue.***	Following the site survey, the museum archaeologist declares that the site/find is **highly significant.** Recovery excavation shall be completed. The site shall be handled in observance of the provisions of LawNo.2863 on the Protection of Cultural and Natural Assets dated 21.07.1983. Museum Archaeologist provides instructions and/or supervision for the test pit/archaeological recovery excavation. Site supervisor notifies his/her superiors. Project management shall provide an archaeological task force under the leadership of the museum archaeologist. The task force shall be composed of qualified archaeologists as well as other specialists and workers. Upon completion of the excavation, the team shall report to the museum management. The Regional Cultural Asset Conservation Board concerned shall officially approve such recovery and notifies the project management duly. The site shall be registered and placed under protection as per Turkish legislation. Archaeology Supervisor(s) shall notify respective authorities. Site supervisor retains a copy of the chance find for his/her records. No further action is required. The chance find procedure is closed.

In cases where human remains have been found, it is of utmost importance to note that the entire project team and local authorities shall be immediately notified.

4. MONITORING AND REPORTING

Site supervisor shall visually monitor any construction and other activities as proof of the presence of cultural inheritance assets.
Chance Finds shall be recorded in the Chance Finds Notification Form (see. Annex A). Print copies of Chance Find Notification Forms shall be available on-site, which shall be always scanned once filled in and registered, and saved.
Chance Find Notification Forms shall be updated by the site supervisor, which is recorded in the Chance Finds Log (see. Annex. B). This document shall be regularly checked.

Annex A. Reporting of Chance Finds – Notification Form

PART A **BÖLÜM A**				
Sub-Project Location: *Proje Sahası*	District (İlçe): Village (Köy):	Date: *Tarih*	Form No:	*Project Information* Proje Bilgisi
Name of person reporting chance find: *Şans bulgusunu rapor eden kişinin ismi*				
Was work stopped in the immediate vicinity of the chance find? ☐ Yes ☐ No *Şans bulgusunun tam çevresinde iş durduruldu mu? Evet Hayır*				
Was a buffer zone created to protect the chance find? ☐ Yes ☐ No *Şans bulguyu korumak için tampon bölge oluşturuldu mu? Evet Hayır*				
NOTIFICATION ***BİLDİRİM***				
Site manager and E&S manager contacted ☐ Yes ☐ No *Saha Müdürü ve Çevre Müdürü ile irtibata geçildi Evet Hayır*				
CHANCE FIND DETAILS ***ŞANS BULGU AYRINTILARI***				
GPS coordinates *GPS koordinatları*		Photo record ☐ Yes ☐ No (HD quality – no cell phone photos) *Fotoğraf kaydı* *Evet Hayır* *(HD kalitesinde –cep telefonu fotoğrafı değil)* If not, explain why: *Değil ise nedenini açıklayınız* Other records ☐ Yes ☐ No Specify (drawings, HD quality videos, etc.): *Diğer kayıtlar Evet Hayır* *Belirtin (çizimler, HD kalite videolar, vb.)*		
Description of chance find: *Şans bulgusunun tanımı*				
Description of site/finding and other specifications of site/finding: (e.g. surface sediment type, ground surface visibility, distance to closest watercourse, etc.) *Sahanın / bulgunun ve saha/bulgunun diğer özelliklerinin tanımı: (örn. Yüzey sediman türü, yüzey zemin görünürlüğü, en yakın suyoluna olan mesafe, vb.)*				

PART B ***BÖLÜM B***	
NOTIFICATION OF MUSEUM DIRECTORATE ARCHAEOLOGIST ***MÜZE MÜDÜRLÜĞÜ ARKEOLOĞUNA BİLDİRİ***	
Monitoring archaeologist contacted museum directorate archaeologist ☐ Yes ☐ No *İzleme arkeoloğu, müze müdürlüğü arkeoloğu ile irtibata geçti.* *Evet* *Hayır* Date of notification: *Bildirim tarihi* Name of museum directorate and name of museum archaeologist: *Müze müdürlüğünün adı ve Müze müdürlüğü arkeoloğunun adı* Contact number of museum directorate archaeologist: *Müze müdürlüğü arkeoloğunun iletişim numarası*	
DECISION OF MUSEUM DIRECTORATE ARCHAEOLOGIST ***MÜZE MÜDÜRLÜĞÜ ARKELOĞUNUN KARARI***	
Date of site visit: *Saha ziyaret tarihi:*	
☐Site/Finding of no significance - Construction to proceed with no further action – End of a chance find procedure *Önemsiz Saha – Bulgu - daha fazla araştırma yapılmadan inşaat devam edilebilir – Şans bulgu prosedürün sonu.* Date of notice to resume work: *İşe devam etme tarihinin bildirisi*	☐ **Site/Finding of significance - Further actions required** *Önemli Saha – Bulgu - Ek araştırma gerekmektedir* Please Fill out Part C *Lütfen Bölüm C'yi doldurun.*
Name of museum directorate archaeologist: *Müze müdürlüğü arkeoloğunun ismi* Contact information: *İletişim numarası*	
Site manager and E&S manager contacted ☐ Yes ☐ No Saha Müdürü ve E & S müdürü ile irtibata geçildi Evet Hayır	
PART C ***BÖLÜM C***	
FURTHER FIELD INVESTIGATION ***EK SAHA ARAŞTIRMASI***	

☐ Site/Finding of minor significance *Az önem taşıyan saha/bulgu*	☐ Site/Finding of moderate significance *Orta derecede önemli saha/bulgu*	☐ Site/Finding of high significance *Çok önemli saha/bulgu*	
Describe additional work to be conducted. Yapılması gereken ek islerin tanımı			

Date started:
Başlangıç tarihi

Date completed:
Bitiriş tarihi

Date of notice to resume work:
İşe geri dönme tarihi bildirisi

Name of museum directorate archaeologist:
Müze müdürlüğü arkeoloğunun ismi:

Contact information:
İletişim numarası

Construction manager contacted *İnşaat müdürü ile irtibata geçildi*	☐ Yes *Evet*	☐ No *Hayır*

ANNEX- B. CHANCE FIND RECORD

DATE OF FIND	BRIEF DESCRIPTION OF THE CHANCE FIND	NAME OF AUTHORİZED STAFF HAS BEEN NOTIFIED	ACTION TAKEN	CHANCE FIND NOTIFICATION COMPLETE	STATUS OPEN OR CLOSED	OTHER CONSIDERATIONS

ANNEX- C. CONTACT INFORMATION

Museum Directorate	Address	Telephone	Fax	E-mail

CONSERVATION BOARD	AREAS OF RESPONSIBILITY	ADDRESS	TELEPHONE	FAX	E-MAIL

Annex- 11. OCCUPATIONAL HEALTH AND SAFETY PLAN

The main objective of the OHS Plan is to ensure a safe and healthy working environment through careful planning, routine inspections, safety awareness, training of all personnel, and safety meetings. All contractors shall apply *Zero Accident Policy*.

Although OHS Plans should be frequently reviewed and updated as needed, incidents, accidents, new methods, and changes in the working environment (new methods, new materials, tools, etc.) are examples of items that must be taken into account when OHS Plans are reviewed and updated. All workers and subcontractors involved in renovation, demolition, reconstruction, or any other activities shall read the appropriate OHS Plan and shall be encouraged to prevent accidents and incidents detrimental to people and the environment.

The items listed below shall be addressed in OHS Plan:

- Policy, Leadership, Commitment
- Emergency Response Plan
    - The Emergency Response Plan shall outline how to respond to general and sector-specific emergencies i.e. well blow-out (what phone number to call, whom to contact, how to contact, where to gather, etc.)
- Outline of health and safety issues and goals of the OHS Plan
- Roles and responsibilities (including roles and responsibilities of subcontractors)
- Applicable laws and regulations (6331 Code on OHS Law and relevant regulations)
- Training plan and goals
- Risk analysis and preventive measures
- General health and safety requirements (including instructions, personal protective equipment, work clothes, caution labels, tool inspections, and required qualifications)
- Access to good pads during drilling and testing
- Measures against the coronavirus pandemic to be integrated into OHS Plan

Table of contents for a sample OHS Management Plan

Content

9. Identification of Risks and Control Measures

9.1. Identification of Risks and Control Measures Affecting the General Construction Site

9.2. Identification of Possible Business-Related Risks and Control Measures and

9.3. Evaluation of Impact on Third Parties

9.4. Risks Arising from Jobs Conflicting in Terms of Time and Space

10. Determination of Work Equipment Needs and Qualifications

11. Determining the Need for Protective Equipment to be Used at the Construction Site

11.1. Collective Protection Systems and Equipment

11.2. Personal Protective Equipment

12. Permit to work system

13. Lock out Tag out Procedure

14. Supervion

15. Training of Employees

16. Emergency preparedness

17. Accident and Incident investigations

18. Employee Health

19. Estimated budget

Annex- 12. COMMUNITY SAFETY AND TRAFFIC MANAGEMENT PLAN

Major community health and safety issues in sub-projects involving renovation, demolition, and reconstruction activities i) noise and dust; ii) work site safety; iii) emergencies; and iv) traffic safety. This Annex introduces general guidelines for the preparation of a Community Safety and Traffic Management Plan. The main objective of the plan is to ensure the safety and health of the community through careful planning, routine inspections, awareness, and training of the community during project development, exploration/drilling and to reduce risks associated with motor vehicle travel and to define practical actions which can be put in effect to mitigate road safety risks. renovation or demolishing and reconstruction activities may require detailed planning depending on site-specific issues.

The items listed below shall be addressed in each plan:

- Policy, Leadership, Commitment.
- Outline of health and safety issues and goals of the plan.
- Roles and responsibilities (including roles and responsibilities of subcontractors).
- Applicable laws and regulations.
- Training plan and goals.
- Risk analysis and preventive measures against below topics:
    - Pandemic (coronavirus and other communicable diseases)
    - Release of pollutants and dust emissions into ambient air
    - Excessive noise
    - Excessive or unregulated vehicle traffic near the sub-project site and through communities at inappropriate times (e.g. children going to school) due to the movement of trucks and other vehicles and machinery to and from the plant
    - Ensuring the driver is properly licensed for the class of a vehicle and free from fatigue, drug, or alcohol impairment.
    - Driving with care at appropriate speeds for road conditions, ensuring all occupants fasten seatbelts.
    - Avoiding the use of all mobile communication devices and other driver distractions, while using any company-leased vehicle on company time
    - Designating safe areas while working around moving vehicles
    - Exposure to hazardous substances
    - Exposure to project-related emergencies (accident, fire, explosion, etc.)
    - Improperly controlled or trained security guards
    - Unresolved problems due to the absence of an external grievance mechanism
- Placement of access deterrents, such as fences and warning signs, to prevent access and warn of existing hazards.

Table of Contents of a Sample Community Safety and Traffic Management Plan

1. PURPOSE AND SCOPE OF THE PLAN

1.1 Overlaps with other Management Plans

2. BACKGROUND POLICIES AND STANDARDS

2.1 National standards and regulations

2.2 International standards

2.3 Source documents

3. ROLES AND RESPONSIBILITIES

Annex- 13. POLLUTION PREVENTION PLAN

Pollution Prevention Plan will be prepared and implemented for sub-projects where appropriate based on the screening procedure conducted. Installation activities will cause noise and air pollution and also hazardous material risks such as chemical spill risks.
The main objectives of preparation of the Pollution Prevention Plan are to:

- Define roles and responsibilities
- Define legal/institutional framework
- Describe and examine the project's potentially negative environmental impacts
- Recommend measures needed to minimize, mitigate, or compensate for adverse impacts
- Improve environmental performance
- Ensure proper monitoring and response to failures of environmental management measures

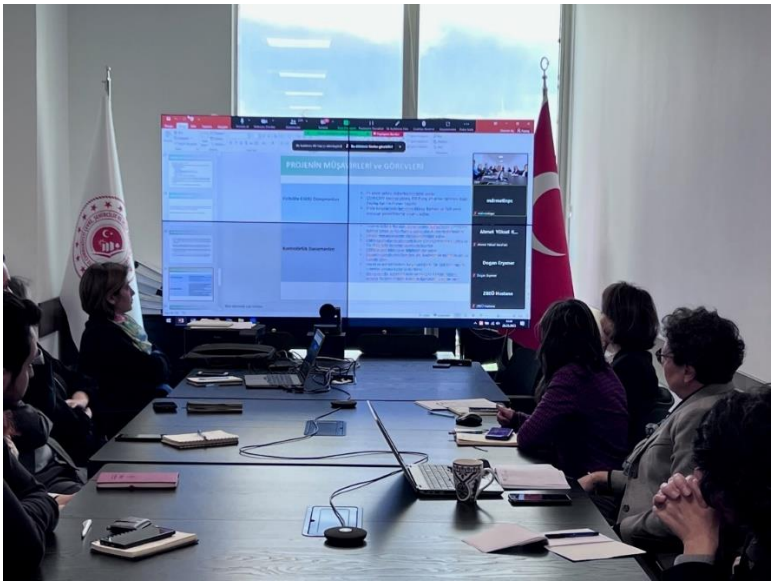
The following aspects should be addressed in each Pollution Prevention Plan:

- Project summary
- Description of the relevant baseline conditions
- Summary of impacts
- Description of mitigation measures
- Description of the monitoring program
- Institutional arrangements and outline of roles and responsibilities

The summary of impacts shall identify the predicted adverse environmental impacts for which mitigation is required. Each mitigation measure shall be briefly described regarding the impact to which it relates. The suggested mitigation measures shall be supported by relevant references, designs, equipment descriptions, and/or operating procedures. Monitoring is important to evaluate environmental performance. Thus, a monitoring program shall be designed to ensure mitigation measures are undertaken in case the proposed measures are inadequate or if impacts were underestimated. The monitoring program shall be linked to the impacts identified and the methods to be used.

Responsibilities for mitigation and monitoring shall be clearly defined and arrangements for coordination between various responsible actors shall be defined. This includes beneficiaries, DSI consultants, and administrative entities.

ANNEX-14 CONSULTATION MEETING PHOTOGRAPHS



ANNEX-15 THE LIST OF PARTICIPANTS

(Annex is given as a separate document)