



**THE WORLD BANK**  
IBRD • IDA | WORLD BANK GROUP

**FOR OFFICIAL USE ONLY**

Report No: PADHI00373

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF EUR553 MILLION  
(US\$600 MILLION EQUIVALENT)

TO THE

THE REPUBLIC OF TÜRKİYE

FOR A

TÜRKİYE SMALL INDUSTRIAL ESTATES RECONSTRUCTION AND REGIONAL ECONOMIC RECOVERY PROJECT  
(P502837)

JULY 5, 2024

Finance, Competitiveness and Innovation  
Europe And Central Asia

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization.

## **CURRENCY EQUIVALENTS**

(Exchange Rate Effective June 28, 2024)

Currency Unit = USD

---

TRY32.89 = US\$1

---

US\$0.03 = TRY 1

## **FISCAL YEAR**

January 1 - December 31

Regional Vice President: Antonella Bassani

Regional Director: Asad Alam

Country Director: J. Humberto Lopez

Practice Manager: Martha Martinez Licetti

Task Team Leaders: Stefka Slavova, Ali H. Abukumail

## ABBREVIATIONS AND ACRONYMS

AALs	Average Annual Losses	MoIT	Ministry of Industry and Technology
APA	Alternative Procurement Arrangements	MoTF	Ministry of Treasury and Finance
BBB	Build Back Better	MPA	Multiphase Programmatic Approach
CERC	Contingent Emergency Response Component	MSME	Micro, Small and Medium Enterprises
CPF	Country Partnership Framework	NDC	Nationally Determined Contributions
DGIZ	Directorate General of Industrial Zones	NPV	Net Present Value
EFA	Economic and Financial Analysis	OECD	Organization for Economic Cooperation & Development
FI	Financial Intermediaries	OHS	Occupational Health and Safety
ERR	Economic Rate of Return	OIZ	Organized Industrial Zone
ESF	Environmental and Social Framework	PDO	Project Development Objective
ESIAs	Environmental and Social Impact Assessment	PFS	Project Financial Statements
E&S	Environmental and Social	PIU	Project Implementation Unit
ESMF	Environmental and Social Management Framework	POM	Project Operations Manual
ESSs	Environmental and Social Standards	PPSD	Procurement Strategy for Development
ESRS	Environmental and Social Review Summary	RF	Resettlement Framework
EU	European Union	RQ	Research Quotient
GDP	Gross Domestic Production	SEA/SH	Sexual Exploitation and Abuse, and Sexual Harassment
GHGs	Greenhouse Gases	SEP	Stakeholder Engagement Plan
GoT	Government of Türkiye	SERR	Social Economic Rate of Return
GRADE	Global Rapid Post-Disaster Damage Estimation	SIE	Small Industrial Estate
GRS	Grievance Redress Service	SNPV	Social Net Present Value
HEIS	Hands-on Expanded Implementation Support	SOP	Series of Projects
IBRD	International Bank for Reconstruction and Development	SORT	Systematic Operations Risk-Rating Tool
IDA	International Development Association	SuTPs	Syrians under Temporary Protection
IFRs	Interim Unaudited Financial Reports	UN	United Nations
IPF	Investment Project Financing	UNDP	United Nations Development Program
LMP	Labor Management Procedure	SPP	Solar Power Plant
M&E	Monitoring and Evaluation	sqm	Square Meter
MoEUCC	Ministry of Environment, Urbanization and Climate Change		

## TABLE OF CONTENTS

<b>DATASHEET</b> .....	<b>1</b>
<b>I. STRATEGIC CONTEXT</b> .....	<b>6</b>
A. Country Context .....	6
B. Sectoral and Institutional Context.....	7
C. Relevance to Higher Level Objectives .....	9
<b>II. PROJECT DESCRIPTION</b> .....	<b>10</b>
A. Project Development Objective .....	10
B. Project Components.....	11
C. Project Beneficiaries.....	15
D. Results Chain .....	16
E. Rationale for Bank Involvement and Role of Partners .....	16
F. Lessons Learned and Reflected in the Project Design .....	17
<b>III. IMPLEMENTATION ARRANGEMENTS</b> .....	<b>18</b>
A. Institutional and Implementation Arrangements .....	18
B. Results Monitoring and Evaluation Arrangements .....	19
C. Sustainability .....	20
<b>IV. PROJECT APPRAISAL SUMMARY</b> .....	<b>20</b>
A. Technical, Economic and Financial Analysis.....	20
B. Fiduciary .....	21
C. Legal Operational Policies .....	21
D. Environmental and Social.....	22
<b>V. GRIEVANCE REDRESS SERVICES</b> .....	<b>22</b>
<b>VI. KEY RISKS</b> .....	<b>22</b>
Overall Risk and Explanation .....	22
<b>VII. RESULTS FRAMEWORK AND MONITORING</b> .....	<b>25</b>
<b>ANNEX 1: Project Economic and Financial Analysis</b> .....	<b>27</b>
<b>ANNEX 2: Institutional Arrangements - Financial Management</b> .....	<b>30</b>
<b>ANNEX 3: Financial Intermediaries Tag Assessment</b> .....	<b>32</b>
<b>ANNEX 4: Climate Mitigation and Adaptation Measures</b> .....	<b>34</b>
<b>ANNEX 5: SIE Sites Selection and Potential Demand for Workshops</b> .....	<b>41</b>



**DATASHEET**

**BASIC INFORMATION**

Project Beneficiary(ies) Türkiye	Operation Name Türkiye Small Industrial Estates Reconstruction and Regional Economic Recovery Project		
Operation ID P502837	Financing Instrument Investment Project Financing (IPF)	Environmental and Social Risk Classification Moderate	

**Financing & Implementation Modalities**

<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input type="checkbox"/> Contingent Emergency Response Component (CERC)
<input type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Performance-Based Conditions (PBCs)	<input type="checkbox"/> Small State(s)
<input checked="" type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a non-fragile Country
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made Disaster
<input type="checkbox"/> Alternative Procurement Arrangements (APA)	<input type="checkbox"/> Hands-on Expanded Implementation Support (HEIS)

Expected Approval Date 29-Jul-2024	Expected Closing Date 31-Dec-2028
Bank/IFC Collaboration No	

**Proposed Development Objective(s)**

The PDO is to support the restoration and sustainability of MSME operations in the earthquake-affected provinces through building resilient and low-emission Small Industrial Estates (SIEs).

**Components**

Component Name	Cost (US\$)
Construction of Resilient and Low-Emission SIEs	587,500,000.00



Technical Assistance and Project Management	12,500,000.00
---	---------------

**Organizations**

Borrower: The Republic of Türkiye  
 Implementing Agency: Ministry of Industry and Technology (MoIT), Directorate General of Industrial Zones

**PROJECT FINANCING DATA (US\$, Millions)**

**Maximizing Finance for Development**

Is this an MFD-Enabling Project (MFD-EP)? Yes  
 Is this project Private Capital Enabling (PCE)? No

**SUMMARY**

Total Operation Cost	600.00
Total Financing	600.00
of which IBRD/IDA	600.00
Financing Gap	0.00

**DETAILS**

**World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	600.00
--	--------

**Expected Disbursements (US\$, Millions)**

WB Fiscal Year	2025	2026	2027	2028	2029
Annual	60.00	250.00	200.00	85.00	5.00
Cumulative	60.00	310.00	510.00	595.00	600.00

**PRACTICE AREA(S)**



**Practice Area (Lead)**

Finance, Competitiveness and Innovation

**Contributing Practice Areas**

**CLIMATE**

**Climate Change and Disaster Screening**

Yes, it has been screened and the results are discussed in the Operation Document

**SYSTEMATIC OPERATIONS RISK- RATING TOOL (SORT)**

Risk Category	Rating
1. Political and Governance	● Moderate
2. Macroeconomic	● Substantial
3. Sector Strategies and Policies	● Low
4. Technical Design of Project or Program	● Low
5. Institutional Capacity for Implementation and Sustainability	● Moderate
6. Fiduciary	● Substantial
7. Environment and Social	● Moderate
8. Stakeholders	● Low
9. Overall	● Moderate

**POLICY COMPLIANCE**

**Policy**

Does the project depart from the CPF in content or in other significant respects?

Yes  No

Does the project require any waivers of Bank policies?

Yes  No

**ENVIRONMENTAL AND SOCIAL**



**Environmental and Social Standards Relevance Given its Context at the Time of Appraisal**

E & S Standards	Relevance
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10: Stakeholder Engagement and Information Disclosure	Relevant
ESS 2: Labor and Working Conditions	Relevant
ESS 3: Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4: Community Health and Safety	Relevant
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
ESS 8: Cultural Heritage	Relevant
ESS 9: Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank’s due diligence assessment of the Project’s potential environmental and social risks and impacts, please refer to the Project’s Appraisal Environmental and Social Review Summary (ESRS).

**LEGAL**

**Legal Covenants**

**Sections and Description**

Loan Agreement (LA), Schedule 2, Section I.A.1. The Borrower, through MoIT, shall throughout the implementation of the Project and to the satisfaction of the Bank, operationalize and maintain a Project Implementation Unit, with terms of reference, staffing and budgetary resources necessary and appropriate to, in the Bank’s opinion, effectively carry out the Project.

LA, Schedule 2, Section I.A.2. For Part 1 of the Project, the Borrower, through MoIT, shall carry out the construction activities: (a) based on detailed demand assessments, consultations with MSMEs and business associations in the Earthquake-affected Provinces, and economic feasibility considerations in consultation with the Bank; (b) using energy efficient blueprints and advanced, durable materials capable of withstanding natural disaster impacts, particularly earthquakes, and climate-induced stresses for the workshops; and (c) applying sustainable energy and green solutions (including solar panels for renewable energy generation and rainwater harvesting systems to enhance water efficiency and address future climate risks) for the common infrastructure supporting the workshops financed under Part 1 of the Project.





LA, Schedule 2, Section I.B.1 and 2. The Borrower, through MoIT, shall maintain, throughout the implementation of the Project, the Project Operations Manual (POM), in substance and manner acceptable to the Bank, and shall carry out the Project, in accordance with the arrangements, procedures and guidelines set forth in the POM.

LA, Schedule 2, Section I.C.1. In carrying out Part 1 of the Project, the Borrower, through MoIT, shall ensure that, unless otherwise agreed to by the Bank in writing and thereafter incorporated into the POM, the appraisal and selection of SIE sites for the financed workshops shall be in accordance with the selection criteria set forth in the LA.

LA, Schedule 2, Section I.D.1-5. In furtherance of Part 1 of the Project, the Borrower, through MoIT, shall ensure that, unless otherwise agreed to by the Bank in writing and thereafter incorporated into the POM, (a) the appraisal and selection of potential Beneficiary MSMEs, and (b) the sale of the constructed workshops, shall all be in accordance with the criteria, terms, conditions, and procedures specified in the LA and as may be further detailed in the POM.

LA, Schedule 2, Section I.E.1 and 2. The Borrower, through MoIT, shall ensure that the Project is carried out in accordance with the Environmental and Social Standards, and the Environmental and Social Commitment Plan, in a manner acceptable to the Bank.

**Conditions**

Type	Citation	Description	Financing Source
Effectiveness	LA, Section 4.01 (a)	The Borrower, through MoIT, has adopted an ESMF for the Project, in form and substance satisfactory to the Bank.	IBRD/IDA
Effectiveness	LA, Section 4.01 (b)	The Borrower, through MoIT, has properly established and staffed its PIU with positions, terms of reference, and qualified staff acceptable to the Bank, including assigning or hiring to the PIU: (i) one social specialist; (ii) one environmental specialist; (iii) one occupational, health and safety specialist; and (iv) one stakeholder engagement specialist.	IBRD/IDA
Effectiveness	LA, Section 4.01 (c)	The Borrower, through MoIT, has adopted a POM in form and substance satisfactory to the Bank.	IBRD/IDA



## I. STRATEGIC CONTEXT

### A. Country Context

1. **Türkiye's development achievements over the past two decades have been remarkable.** Real gross domestic product (GDP) growth averaged 5.4 percent between 2002 and 2022, resulting in income per capita (in real terms) that more than doubled over the same period. Moreover, growth was accompanied by rapid poverty reduction, with the poverty rate (US\$6.85 2017 PPP poverty line) halving from above 20 percent in 2007 to less than 10 percent in 2021. As in other countries, the COVID-19 pandemic had a negative impact on growth in 2020, but the country was one of the few that did not register a GDP contraction that year, instead growing 1.9 percent. This performance was due, to a large extent, to the government's economic policy response to the pandemic, which focused on loosening monetary policy and rapid credit expansion. Moreover, supported by domestic and external demand, Türkiye achieved double-digit GDP growth in 2021 (11.4 percent) and maintained significant momentum in 2022 (5.5 percent) and 2023 (4.5 percent).

2. **However, the policy framework that ensured a strong economic performance during and after the pandemic also heightened macroeconomic risks.** As a result of the loose monetary policy, the country has been experiencing high inflation (with annual inflation reaching 65.8 percent in March 2024 after having peaked at 85.5 percent in October 2022), currency depreciation (77 percent against the US\$ between January 2020 and January 2024), corporate and banking sector vulnerabilities, and declines in reserve buffers.

3. **Following the May 2023 elections, the Government has taken steps towards normalizing the economy in a gradual way in order to manage risks associated with the adjustment process.** This includes monetary policy tightening, with interest rates increasing from 8.5 percent in May 2023 to 50 percent in March 2024, the unwinding of complex macroprudential, and fiscal revenue measures to curtail the fiscal deficit. Markets are reacting positively with 5-year CDSs declining from above 500 basis points (bps) in May 2023 to around 300bps in March 2024, two of the major rating agencies upgrading their outlook to positive recently, and one of them (Fitch) upgrading the credit rating (to B+) on March 8, 2024. The authorities are also contemplating how to complement these actions with structural reforms that may help with growth prospects going forward. These efforts will need to be sustained and supported in the coming months to manage the monetary and fiscal risks.

4. **On February 6, 2023, two earthquakes of magnitude 7.8 and 7.5 hit southeast Türkiye and Syria; these were followed by thousands of aftershocks and another earthquake of magnitude 6.7 on February 20, 2023.** The epicenters of the first two earthquakes were in Kahramanmaraş Province, with the neighboring provinces of Adana, Adıyaman, Diyarbakır, Elazığ, Gaziantep, Hatay, Kilis, Malatya, Osmaniye, and Şanlıurfa (the earthquake region) all suffering significant damages. The epicenter of the third earthquake was in Hatay. According to official statistics, the earthquakes resulted in over 50,000 casualties, 107,000 people injured, 1.9 million housing units damaged or destroyed, and almost 2 million citizens in need of shelter in camps and container settlements. The 11 affected provinces cover an area of about 110,000 square kilometers, which was home to 14 million Turkish citizens (16.4 percent of the country's population), with an economy accounting for 9.4 percent of Turkish GDP in 2022.

5. **The earthquakes have caused major damages to the industrial sector, however, indicators point to a rapid recovery in activity, as reconstruction is gathering momentum, and trade and industrial production in the earthquake-affected provinces have been partially restored.** About 70 percent of Türkiye's population live in first- and second-degree seismic zones. Not including the February 2023 earthquakes, Türkiye has experienced 39 earthquakes with a magnitude of 5 and above since 1990, resulting in approximately 20,000 lives lost, a total affected population of 4.4 million, and direct damages exceeding US\$43 billion. A World Bank Global Rapid Post-Disaster Damage Estimation (GRADE) estimated initial



direct physical damages of the earthquakes at US\$34.2 billion, the equivalent of 4 percent of Türkiye's 2021 GDP. The report highlighted that recovery and reconstruction costs would be much higher, potentially twice as high. The Government of Türkiye (GoT) conducted a more in-depth needs and loss assessment with support from the European Union (EU), the United Nations Development Program (UNDP), and the Bank, which was presented at a donor conference on March 20, 2023. This assessment estimated recovery and reconstruction needs at US\$81.5 billion. The net effects of the earthquakes on overall economic activity are expected to be mildly negative in 2023, and positive in 2024 as reconstruction offsets the disruption to economic activity in the affected region.

**6. Türkiye's geographic, climatic, and socioeconomic conditions make it highly vulnerable to the impacts of climate change and natural disasters, making climate adaptation and resilience high priorities.** The country's exposure to climate-related hazards, namely flooding (flash floods and urban flooding), landslides, water scarcity and droughts, heat waves and wildfires, is considered high and further contributes to the country's vulnerability<sup>1</sup>. In late 2019, 935 extreme climate events occurred, caused mainly by heavy rains, floods, windstorms, snow, and hail, in addition to wildfires. Climate-related disasters have been striking with greater frequency and intensity over the past two decades and can create compound risks; for example, on March 15, 2023, torrential rains caused flooding and further damage in regions affected by the devastating February 2023 earthquakes. Average Annual Losses (AALs) to GDP from earthquakes in Türkiye are estimated at US\$10 billion, and impact 1 million people on average annually. Floods result in AALs to GDP of US\$5 billion and impact an estimated 600,000 people on average annually. Türkiye is among the most affected regions for forest fire risk in the world, while climate change induced heat waves and dry winds are increasing the occurrence of wildfires, with devastating events already recorded in 2021 and 2023<sup>2</sup>. Climate disasters also disproportionately affect women, youth, disabled people, and other such groups in terms of labor force participation, unemployment, and relative asset losses, among other outcomes. This operation will address climate- and disaster-related risks and support adaptation by ensuring that potential impacts of climate change are considered, and design and construction measures to strengthen climate resilience are applied. Türkiye's Nationally Determined Contributions (NDCs)<sup>3</sup> and the Country Climate and Development Reports (CCDR)<sup>4</sup> indicate the need for reducing GHG emissions in buildings, which this operation will support by applying energy efficiency measures and renewable energy generation in all new buildings in accordance with advanced requirements.<sup>5</sup>

## B. Sectoral and Institutional Context

**7. Micro, Small and Medium Enterprises (MSMEs) in Türkiye account for 99 percent of total registered businesses and make an important contribution to the Turkish economy.** According to KOSGEB's SME data, about 15 percent of MSMEs in Türkiye are in the 11 earthquake-affected provinces (473,354 MSMEs), including 35,674 manufacturing MSMEs that employ 133,024 workers. Many manufacturing MSMEs are based in Industrial Estates, known as Sanayi Siteleri in Turkish language, which are registered as cooperatives at the Ministry of Environment, Urbanization and Climate Change (MoUECC). The Ministry of Industry and Technology (MoIT), Directorate General of Industrial Zones (DGIZ) has oversight over Industrial Estates, and like with Organized Industrial Zones (OIZs), has the authority to invest in Industrial Estates infrastructure. MoIT records show that 248 Industrial Estates (14.6 percent of all Industrial Estates) are in the 11

<sup>1</sup> <https://thinkhazard.org/en/report/249-turkey>

<sup>2</sup> <https://www.climatechange.org/turkey/forest-fires/>

<sup>3</sup> [https://unfccc.int/sites/default/files/NDC/2023-04/T%C3%9CRK%C4%B0YE\\_UPDATED%201st%20NDC\\_EN.pdf](https://unfccc.int/sites/default/files/NDC/2023-04/T%C3%9CRK%C4%B0YE_UPDATED%201st%20NDC_EN.pdf)

<sup>4</sup> <https://openknowledge.worldbank.org/server/api/core/bitstreams/80bdfcf8-73b1-42b3-b107-1629f64a1f0c/content>

<sup>5</sup> Buildings will need to comply with the Turkish Standards Institute (TSI) Building Rules, that include advanced requirements on EE and the use of RE (<https://viewer.tse.org.tr/QDMSNET/BSAT/SL.aspx?L=-1144823936>), and the Ministry will use TSI Green Industrial Estate Certificate procedures for the certification, which TSI will introduce for the SIEs, following the existing Green Building Certificate (<https://viewer.tse.org.tr/QDMSNET/BSAT/SL.aspx?L=-1144823936>)



earthquake-affected provinces and have been impacted by the 2023 earthquakes to a varying degree, resulting in interruptions in economic activity and labor outflows.

8. **Industrial Estates have played an important role in the Turkish economy since their introduction in 1963 by providing a suitable environment for MSMEs to operate.** These estates are usually located on the outskirts of cities and offer a range of facilities and services to support MSMEs, such as affordable workshops, shared resources, access to infrastructure, utilities, transportation and, since 1965, also access to credit facilities. Most Industrial Estates are established and operate as building or management cooperatives, bringing together small entrepreneurs, such as craftspeople, tradespeople, small-scale manufacturers, and service providers. According to MoEUCC, since the 1960s, over 1,500 Industrial Estates have been registered across Türkiye to date, providing workshops to more than 100,000 MSMEs. Industrial Estates facilitate industrial agglomeration and significantly contribute to employment and economic development. The establishment of new Small Industrial Estates (SIEs) using disaster-resilient materials and greener technologies can ensure that MSMEs and wider communities in the earthquake-affected provinces can better withstand and adapt to the adverse impacts of climate change.

9. **Since 1965, MoIT has offered credit to building cooperatives to incentivize Industrial Estate development throughout Türkiye.** MoIT has financed up to 100 percent of the common Industrial Estate infrastructure, such as shared buildings and areas, electricity, and water connections, and 70 percent of the workshop costs. Through these investments, MoIT had completed the establishment of 497 Industrial Estates across the country by the time the earthquakes hit in February 2023. Currently, MoIT continues to offer financing at a 3 percent annual interest rate with a 3-year grace period and a maturity of 13 years. Those 497 Industrial Estates include about 97,511 workshops that employ 487,232 workers who have benefited from improved working conditions. As of March 2024, the overall cost of the program is 71.2 billion Turkish Liras (approximately US\$2.2 billion according to the March 20, 2024, exchange rate).

10. **The Industrial Estates in the 11 earthquake-affected provinces were affected to varying degrees during the February 2023 earthquakes.** 28 Industrial Estates (of 248 in total) located in the impacted provinces suffered the greatest damages (Table 1). MoIT estimates that around 4,400 workshops, employing approximately 13,263 workers, were either destroyed or severely damaged (Table 2). As of March 2024, most of these workshops and common Industrial Estate infrastructure remain in need of reconstruction or repair, with some firms operating out of unsafe, partially destroyed buildings. Under the project, it has been appraised that MoIT will target the building of new SIEs in 4 of the earthquake-affected provinces in seven locations that were deemed suitable for such investments, close to urban centres, and where the terrain was more appropriate for construction. The selection of additional earthquake-affected provinces and sites for new SIEs may be considered for financing, subject to site eligibility and prioritization criteria, identified in Annex 5, and with the agreement of the Bank.

**Table 1: Industrial Estates across Türkiye and in the earthquake-affected provinces**

	Number of Industrial Estates	Number of Workshops	Number of Workers
Industrial Estates across Türkiye with access to MoIT credit	497	97,511	487,232
Industrial Estates registered in the earthquake-affected provinces	248	33,784	168,920

Source: MoIT

**Table 2: Damage status of Industrial Estates in earthquake-affected provinces**

Province	No. of Industrial Estates	Destroyed		Heavily damaged	
		Number of workshops	Number of workers	Number of workshops	Number of workers
Kahramanmaraş	5	716	2,148	1,047	3,141
Gaziantep	5	4	12	18	54
Hatay	8	668	2,004	423	1,269
Malatya	3	19	57	1,329	3,987
Adıyaman	3	3	9	64	192
Osmaniye	3	3	9	119	357
Şanlıurfa	1	0	0	8	24
<b>Total</b>	<b>28</b>	<b>1,413</b>	<b>4,239</b>	<b>3,008</b>	<b>9,024</b>
<b>Grand total (workshops)</b>			<b>4,421</b>		
<b>Grand total (workers)</b>			<b>13,263</b>		

Source: MoIT as of May 2023

11. In July 2023, MoIT established a special program of financing for the reconstruction of workshops in existing Industrial Estates and the establishment of new SIEs in the 11 earthquake-affected provinces. For this purpose, on July 15, 2023 the Presidency published in the Official Gazette an amendment to the Organized Industrial Zones Law No. 4562. The amendment added Provisional Article 17, which authorizes MoIT to implement a special program for the reconstruction of workshops in existing Industrial Estates and the establishment of new SIEs in the 11 earthquake-affected provinces. Based on this amendment, between July and November 2023 MoIT facilitated the issuance of 32 Presidential Decrees that designated 32 new industrial sites in the earthquake region for the establishment of new SIEs. As of March 2024, construction activities are underway in three of these sites (Malatya Yeşilyurt, Gaziantep İslahiye and Kahramanmaraş Pazarcık). In December 2023 MoIT adopted a new Regulation on Industrial Areas and Workplaces in Disaster Areas (published in the Official Gazette on December 30, 2023) that sets out the rules and principles for the application of Provisional Article 17 of the OIZ Law Amendment issued in July 2023.<sup>6</sup> The regulation clearly defines the criteria for establishment of new SIEs, including the potential beneficiaries, the application process and selection procedures, as well as the terms and conditions of financial support and the sale of workshops. According to the regulation, MSMEs that have lost their premises will be able to apply for the purchase of workshops within the newly constructed SIEs upon their completion.

12. GoT has requested World Bank Group (WBG) support to design and finance a lending operation to build new SIEs on designated public land. The Project follows the existing Post-Earthquake MSMEs Recovery Project (P181068), which provided finance for MSMEs for their immediate operational needs. In line with the Amendment to the OIZ Law and the Regulation on Industrial Areas and Workplaces in Disaster Areas, and in line with current projections, the Project will support the construction of approximately 1,600 workshops for MSMEs that owned or rented such workshops in the 11 earthquake-affected provinces prior to the February 2023 earthquakes. The new SIEs will be designed to be resilient to future earthquakes, other natural disasters, and adverse impacts of climate change, and will include energy and water efficiency measures in their construction design. Based on a preliminary assessment, about 111,039 kwh/year of renewable energy could be generated, and 147,030 metric tons/year of CO<sub>2</sub>-equivalent emissions could be reduced through the new investments in renewable energy (in particular, solar energy and use of low-carbon materials in the construction process) in the seven selected sites.

### C. Relevance to Higher Level Objectives

<sup>6</sup> "Regulation on Industrial Areas and Workplaces in Disaster Areas", published in the Official Gazette on December 30, 2023.



13. **The Project is in line with the objectives of the WBG Country Partnership Framework (CPF) for Türkiye (FY24-28).** The Project supports High-Level Objectives (HLO) 1 (high and sustainable productivity growth), HLO2 (Inclusive services and jobs), and HLO3 (strengthened resilience) of the CPF (report no.: CPF0000004) for Türkiye.<sup>7</sup> For High-Level Objective 1, the Project is contributing to the achievement of CPF Objective 1 (Boost competitiveness and enabling services) and Objective 2 (Support post-earthquake economic recovery and spatial development) by supporting the critical agenda of private-sector-led growth, with an emphasis on increased productivity and higher income growth through the restoration and recovery of economic activity in earthquake-affected provinces and allowing for economies of scale and agglomeration effects to be derived by MSMEs located in new SIEs. Since there is sectoral concentration in some of the industrial estates, the workplaces in these areas will be able to benefit from the ensuing externality effect. The Project will support building small industrial estates for MSMEs that had their industrial workshops damaged by the earthquakes, to support their economic recovery. For High-Level Objective 1, the Project is contributing to the achievement of CPF Objective 4 (Improve jobs for women, youth, and vulnerable groups) by promoting increased access to formal employment opportunities for women in earthquake-affected provinces. For High-Level Objective 3, the Project is contributing to the achievement of Objective 7 (Enhance disaster resilience and preparedness) by focusing on strengthening resilience to shocks and addressing climate change and environmental sustainability. It places an important emphasis on preparedness and resilience to earthquakes and climate-related disasters as part of the structural design of industrial workshops.

14. **The Project is in line with Türkiye's Twelfth Development Plan (2024-2028).** The Plan emphasizes the need to allocate more resources, following the February 2023 earthquakes, for both repairing the damages and building more resilient infrastructure able to withstand future disasters. The Project aligns with the Plan's objective to support the manufacturing industry's competitiveness through investments in green and digital solutions. This includes the creation of SIEs in a suitable and sustainable way for the supply chain, in terms of access to raw materials, logistics services, energy, railway and port connections, and environmental aspects.

15. **The Project will support the Türkiye's NDC goals<sup>8</sup> and relevant national climate action strategies and plans (e.g., Climate Change Strategy 2010-2023<sup>9</sup>, National Climate Change Adaptation Strategy and Action Plan<sup>10</sup>, National Energy Efficiency Action Plan<sup>11</sup>) and is aligned with the findings of the CCDR.<sup>12</sup>** The promotion of energy efficiency and use of renewable energy in buildings, as well as their resilience to the adverse impacts of climate change, are among the key mitigation activities identified in 2023 NDC. The Project components support these priority areas of climate action by (i) ensuring that design and construction measures consider potential impacts of climate change and strengthen climate resilience, and (ii) applying energy efficiency measures and renewable energy generation in all new buildings to support mitigation.

## II. PROJECT DESCRIPTION

### A. Project Development Objective

<sup>7</sup> The CPF was discussed by the Board on April 9, 2024.

<sup>8</sup> Republic of Türkiye Updated First NDC: [https://unfccc.int/sites/default/files/NDC/2023-04/T%C3%9CRK%C4%B0YE\\_UPDATED%201st%20NDC\\_EN.pdf](https://unfccc.int/sites/default/files/NDC/2023-04/T%C3%9CRK%C4%B0YE_UPDATED%201st%20NDC_EN.pdf)

<sup>9</sup> [https://webdosya.csb.gov.tr/db/iklim/editordosya/iklim\\_degisikligi\\_stratejisi\\_EN\(2\).pdf](https://webdosya.csb.gov.tr/db/iklim/editordosya/iklim_degisikligi_stratejisi_EN(2).pdf)

<sup>10</sup> NAP: [https://webdosya.csb.gov.tr/db/iklim/editordosya/file/eylem%20planlari/uyum\\_stratejisi\\_eylem\\_plani\\_EN\\_Final.pdf](https://webdosya.csb.gov.tr/db/iklim/editordosya/file/eylem%20planlari/uyum_stratejisi_eylem_plani_EN_Final.pdf)

<sup>11</sup> NEEP: <https://enerji.enerji.gov.tr/Media/Dizin/EVCED/tr/EnerjiVerimlili%C4%9Fi/UlusalEnerjiVerimlili%C4%9FiEylemPlan%C4%B1/Belgeler/NEEAP.pdf>

<sup>12</sup> Türkiye CCDR: <https://openknowledge.worldbank.org/server/api/core/bitstreams/ffa637a2-d07c-40b1-9992-cc350a46fe6a/content>



## PDO Statement

16. The PDO is to support the restoration and sustainability of MSME operations in the earthquake-affected provinces through building resilient and low-emission Small Industrial Estates (SIEs).

## PDO-Level Indicators

17. The Project will have the following PDO-level results indicators:
- Number of beneficiary MSMEs that start activities in resilient and low-carbon-emission workshops (Number)
    - Out of which, number of women-owned or led beneficiary MSMEs (Number)
  - Share of beneficiary MSMEs that retain or increase their employment post-earthquake (percentage).
  - Reduction in net greenhouse gas (GHG) emissions by SIEs per year (Metric tons/year)

## B. Project Components

18. **The World Bank will provide financial support to MoIT's Directorate General of Industrial Zones (DGIZ) for the construction of approximately 1,600 workshops in 7 new SIEs to house MSMEs heavily impacted by the earthquakes of February 2023.** The workshops will be disaster-and climate-resilient, and eligible MSMEs will be those that owned or rented a workshop inside an Industrial Estate, an OIZ, or an Industrial Park in one of the 11 earthquake-affected provinces prior to the February 2023 earthquakes. If MSMEs operated outside one of the existing Industrial Estates, OIZs, and Industrial Parks, they are also eligible per the July 2023 OIZ Law amendment and the relevant Regulations issued in December 2023,<sup>13</sup> provided they operated in the manufacturing or the services for maintenance and repair sectors before the earthquakes. In either case, the new workshops will replace a fully destroyed or heavily damaged workshop. Once the new workshops are completed, eligible MSMEs will be able to purchase them from MoIT at the actual workshop construction cost, including common infrastructure and land, and pay back according to the financing terms of the sales agreement between MoIT and each beneficiary MSME. Some MSMEs may opt to pay with their own resources upfront.

19. **The Project will include two components.** The first component will finance investments in new SIEs and workshops to be built and offered for sale to eligible MSMEs, while the second will finance expenses for Project-related technical assistance and management. The bulk of the financing will be under component 1, given the huge reconstruction needs. However, some important technical assistance will also accompany the investments in "brick and mortar" to enable beneficiary MSMEs to be better prepared for climate and disaster challenges and equip them with the resources and environment to attract more female workers and women-owned or -led businesses.

20. **Component 1. Construction of Resilient and Low-Emission SIEs (US\$587.5 million).** This component will finance the construction of approximately 1,600 workshops within seven new SIEs, which will then be sold to eligible MSMEs. In addition to the workshops, the component will also finance the common infrastructure for the 1600 workshops in the SIEs, outer spaces, electricity and water lines, small access roads and other necessary facilities. To determine the MSMEs' needs, in early 2024, MoIT estimated the likely demand for workshops based on extensive consultations with MSMEs and business associations in the earthquake-affected provinces. MoIT and stakeholders discussed workshop features, such as location, size, materials used and building techniques, timelines and potential construction costs. The assessment identified a clear preference by MSMEs for newly built workshops (rather than repairing existing ones) in new SIEs. In

---

<sup>13</sup> Official Gazette number 32415



total, according to site visits of MoIT staff, MSMEs need approximately 8,517 new workshops in seven new SIEs to be built in four provinces<sup>14</sup> (Annex 5). MoIT has requested that World Bank financing be provided under component 1 for the construction of approximately 1,600 workshops and related common infrastructure in the seven selected SIE locations at an estimated cost of US\$587.5 million (Table 3). MoIT has preliminarily allocated the 1,600 workshops across the 7 SIEs using a combination of criteria, such as the size of the plot, specific regulations affecting the availability of the land, and the level of damage in the province (Annex 5). As the Project nears the start of workshop construction, MoIT will verify the actual demand for workshops by asking MSMEs to submit an ‘Expression of Interest’ via an online form. In case the need arises, additional earthquake-affected provinces and sites for new SIEs may be considered for financing, subject to site eligibility and prioritization criteria, identified in Annex 5, and with the agreement of the Bank. The average cost per square meter (sqm) is estimated at about US\$1,200 and includes the costs of building one workshop with one floor, as well as prorated costs of common infrastructure and green solutions (see Annex 4 for details of climate mitigation and adaptation solutions).

**Table 3: Cost Breakdown of New SIEs financed by Project Component 1**

No	Province	SIE	Area Size (ha)	Total Building Area (sqm)	Potential Demand Estimates	Coverage Rate %	No. of Workshops Projected	Total Cost (US\$ million) (Infrastructure, Workshops & Green Solutions)
1	ELAZIĞ	Çamyatağı	107.8	35,000	2,842	7%	200	45.5
2	HATAY	İskenderun Bitişik	40.2	34,000	56	100%	56	43.3
3	KAHRAMANMARAŞ	Alibeyuşağı	108.0	204,300	2,483	22%	544	261.7
4	KAHRAMANMARAŞ	Halkaçayırı	146.0					
5	KAHRAMANMARAŞ	Urumoğlu	47.5					
6	MALATYA	Battalgazi Eski Malatya	2.6	9,600	84	83%	70	12.6
7	MALATYA	Yeşilyurt (stage 2)	229.7	175,000	3,052	24%	730	224.4
<b>Total</b>			<b>681.8</b>	<b>457,900</b>	<b>8,517</b>	<b>19%</b>	<b>1,600</b>	<b>587.5</b>

Source: MoIT Potential Demand Assessment, March 2024, and building cost calculations, May 2024.

**21. The new SIEs will be built following disaster resilience, climate mitigation, and climate resilience standards and practices.** The 1,600 new workshops constructed within the SIEs and their supporting common infrastructure financed by the Project will adhere to sustainable principles and green solutions that reduce carbon footprints. To construct such workshops, best practices point to incorporating specific solutions, such as the use of advanced, durable materials capable of withstanding natural disaster impacts, particularly earthquakes, and climate-induced stresses. When constructing the common infrastructure, the focus will be on integrating sustainable energy solutions, such as solar panels for renewable energy generation, and rainwater harvesting systems to enhance water efficiency and address future climate risks (water scarcity and flash floods) (see Annex 4 for details on climate mitigation and adaptation solutions). The construction will include measures to obtain ‘Green Industrial Estates’ Certification for the respective SIEs MoIT has preliminarily set specific sustainability targets that new SIEs should meet for new renewable energy produced, for the reduction in CO2 equivalent emissions resulting from solar panels (SPP), LED and embedded carbon (Table 4). This targeted approach ensures that the infrastructure not only supports immediate economic recovery but is also resilient against future climate challenges and contributes to the country’s efforts to reduce GHG emissions. MoIT estimates at least a 12-month turnaround time for the construction of the new SIEs, which involves the use of prefabricated building materials that can be rapidly assembled on-

<sup>14</sup> The financial analysis shows that the estimated cost for these new workshops amounts is approximately US\$4.8 billion, including the workshop construction costs, and common infrastructure, including disaster-resilient, climate mitigation and adaptation measures. MoIT intends to finance only about a quarter of the total potential demand, or 2,555 new workshops, for a total cost of US\$1.2 billion using external funding. Of these, 1,600 workshops and their common infrastructure will be financed under the Project. The remaining 955 workshops and their common infrastructure is expected to be funded by other international financial institutions (IFIs) in later phases in SIEs’ development.





site, significantly reducing construction times, and efficient project management techniques, such as fast-track approvals of permits. MoIT’s field engagement activities confirmed that firms whose workshops have been destroyed or heavily damaged by the earthquakes have rented workshops in temporary locations and remain viable.

Table 4: Sustainability objectives to be achieved in the new Small Industrial Estates

Sustainability targets	Baseline assumptions	Target	Target Reductions
Renewable Energy Generation	Grid Electricity	Solar PV	111,039 MWh/year
CO2 Equivalent reductions SPP	Grid Emission Factor – 0.6345	Solar PV	70,454 CO2eq/year
CO2 Equivalent reductions LED	Conventional CFL	LEDs	390 CO2eq/year
CO2 Equivalent reductions from embedded carbon – Cement	CEM I	CEM II	21,751 CO2eq/year
CO2 Equivalent reductions from embedded carbon – Steel	High Carbon Intensity through integrated route – 2.2 tons CO2eq/tons Steel	Low Carbon Intensity with Recycled Steel – 0.29 tons CO2eq / tons of steel	54,435 CO2eq/year
<b>Total</b>			<b>147,030 CO2eq/year</b>

Source: MoIT Demand Assessment, March 2024.

\* Methodology from U.S. Environmental Protection Agency (<https://www.epa.gov>)

22. **The MSMEs eligible for support will meet the criteria specified by new legislation.** The amended OIZ Law (see paragraph 11) allows MoIT to: (i) allocate industrial areas, suitable for SIEs, to MSMEs that owned or rented a workshop in the 11 earthquake-affected provinces before February 2023 and whose workshops were either destroyed or heavily damaged; (ii) make the industrial areas ready for MSMEs by completing the necessary regulatory steps, including obtaining public institution opinions, qualifications, zoning and parcellation changes, and expropriation procedures; (iii) select the right-holders according to the amended law and its implementing regulation; (iv) prepare tender dossiers (administrative and technical documents); (v) build workshops and infrastructure; (vi) deliver workshops to the beneficiaries; and (vii) define specific repayment terms. Within the scope of and in line with the amended law and its implementing regulation, the Project will target beneficiary MSMEs that meet specific criteria, which will be further detailed in the Project Operations Manual (POM).

- a) **Firm type:** A beneficiary firm must be a MSME, as per the definitions in Turkish legislation. Also, in response to the July 2023 OIZ law amendment (see para 11), MSME (i) should have owned or rented a workshop inside an Industrial Estate, an OIZ or an Industrial Park in one of the 11 earthquake-affected provinces prior to the February 2023 earthquakes or, (ii) should be a manufacturing or maintenance or repair registered business that owned or rented a workshop outside an Industrial Estate, an OIZ or an Industrial Park in one of the 11 earthquake-affected provinces (See criterion c below);
- b) **Affected by the earthquakes:** Beneficiary MSMEs must have had their workshops either fully destroyed or heavily damaged, as per the analysis done after the earthquakes by MoEUCC. The provinces of Elâzığ, Hatay, Kahramanmaraş, and Malatya were the areas most affected by the earthquakes, and MSMEs in those provinces have indicated demand for buying new workshops in 7 new SIEs (see Table 3 above);
- c) **Sector:** Beneficiary MSMEs that were operating outside of the Industrial Estates prior to the earthquakes will be either from manufacturing or services for maintenance or repair. In addition, each beneficiary MSME will be a registered business;
- d) **Viability:** Beneficiary MSMEs must meet minimum creditworthiness checks and have no outstanding tax and social security obligations at the time of the application for purchasing a workshop, unless postponed or restructured;
- e) **Growth:** Beneficiary MSMEs commit to hire new workers during the 12-month period following the signing of the individual sales agreement with MoIT. MSMEs acquiring workshops with an area below 250 sqm commit to hire at least one additional worker; MSMEs acquiring workshops with an area between 250 sqm and 750 sqm commit to



hire at least two additional workers; and MSMEs acquiring workshops with an area larger than 750 sqm commit to hire at least three additional workers.

**23. MoIT will be responsible for confirming MSMEs' eligibility, as agreed to by the Bank and outlined in the POM.**

MoIT will open the call of application to all right-holders defined in the regulations, and prioritize owners and tenants who had active businesses in operation before the earthquakes. MSMEs can apply either online or through local MoIT offices and select the type of workshop suitable for their business needs among the different sizes that will be offered. If demand for new workshops outstrips supply, a lottery process will determine the allocation and matching of workshops to the beneficiaries (see Annex 5). If all the eligibility criteria are met, each qualifying MSME will enter into a workshop sale agreement with MoIT, whereby they commit to pay a price equal to the actual construction cost of the workshop, including common infrastructure and land. The repayment for the workshops will be on highly concessional terms: each MSME will be subject to the same repayment terms, i.e., a 3-percent annual interest rate in Turkish lira, a total maturity of 13 years, with a 3-year grace period. MoIT will prioritize the applications of eligible MSMEs that are conducting business operations, however, if there are still workshops available for sale after completing the lottery process, and in line with GoT's relevant regulations, the Project may support individual owners of workshops in Industrial Estates, whose workshops were destroyed or completely damaged by the earthquake but where no business activity took place prior to the earthquakes, provided such beneficiaries commit to begin business operations in the manufacturing, or services for maintenance or repair sectors, personally or through tenants, in the new workshops within 3 months of the acquisition of the new workshop and remain operational for a specified period, to be detailed in the POM.

**24. MoIT DGIZ will contract out the construction of the new SIEs under the World Bank's Procurement Rules and Regulations, and manage and supervise the construction of new SIEs, workshops and the related common infrastructure.**

DGIZ will directly manage the tendering process to hire the construction companies contracted to build the new SIEs (see Procurement section below). DGIZ will also ensure that both the new workshops and the common infrastructure adopt the sustainability-related standards agreed upon. The proposed arrangement of providing new workshops to MSMEs rather than, for example, extending loans or grants to MSMEs, so that they could directly source and manage the construction of new workshops, was chosen for several reasons, including: (i) risk leverage, as this approach leverages GoT's procurement capabilities to ensure that workshops uniformly meet specific climate mitigation- and adaptation-related standards, (ii) economies of scale, as standardizing the construction reduces the costs of per unit of infrastructure built, and quality controls and standards, as it allows for better quality control and adherence to resilience and green standards, (iii) avoiding moral hazard behavior, as MSMEs might not have the incentives to use the loans or grants to build new workshops, and monitoring the loan's compliance costs would be too high; (iv) avoiding coordination problems, as MSMEs would be less able to join forces and build common infrastructure together in new SIEs, and (v) timing, as a centralized approach to infrastructure development can be deployed more quickly than coordinating numerous individual projects. Overall, this financial instrument balances the immediate support needed for long-term economic recovery as well as the resilience and climate-related objectives.

**25. Component 2. Technical Assistance and Project Management (US\$12.5 million).**

This component will provide technical assistance and capacity building to key stakeholders, including MoIT, beneficiary MSMEs, SIE sites management,<sup>15</sup> and others. In addition, the component will provide funding to the Project Implementation Unit (PIU) to manage the implementation of project activities. It will consist of the following two sub-components: (i) project management and support for MoIT's DGIZ PIU and (ii) technical assistance and capacity building for key stakeholders.

<sup>15</sup> MoIT will commit beneficiary MSMEs, as part of their individual sales agreements, to establish a site management organizational structure in each of the newly established SIEs and pay regular fees to cover its operational costs.



26. **Subcomponent 2.1 Project management and support for the Project Implementation Unit (PIU) (US\$10.4 million).** This sub-component will support the existing DGIZ PIU to carry out the implementation of the Project activities. Eligible expenses will include:

- a) Hire of PIU consultants, training and capacity building for the PIU, IT equipment, and other operating costs (US\$5.8 million)
- b) Consultancy services related to the implementation of the project, such as monitoring and evaluation (M&E), preparation of ESMPs and feasibility studies, and design and supervision of construction works carried out under component 1 (US\$4.6 million)

27. **Subcomponent 2.2 Technical assistance and capacity building for MoIT, SIE site management teams, and MSMEs (US\$2.1 million).** The following activities will be supported:

- a) Technical assistance to facilitate the establishment and operations of SIE site management organizational structure which will include training for management staff, advisory and consulting services for SIE site management teams (US\$0.3 million).
- b) Gender-related initiatives and amenities designed to support women-owned or led MSMEs, and female employees, including awareness and outreach, training programs, seminars, female-friendly facilities and equipment (to be covered under Component 1), and other such expenditure which will be fine-tuned during the implementation of the Project (US\$0.3 million).
- c) Provision of advisory activities to SIEs aimed at supporting MSMEs from various manufacturing sectors to innovate and seize business opportunities related to green value chains and circular economy (US\$0.5 million).
- d) Training and capacity-building for other stakeholders, including organizing and hosting nationwide seminars and workshops to facilitate knowledge dissemination and exchange of best practices derived from international and domestic experiences in climate- and disaster-resilient construction (US\$1 million).

### C. Project Beneficiaries

28. **MSMEs, 99 percent of which are micro firms, will be the Project's direct beneficiaries.** MSMEs whose premises were damaged by the February 2023 earthquakes will be able to resume and expand their productive activities within the new SIEs. These new SIEs, consisting of workshops and infrastructure which incorporate green technologies and practices, will enable MSMEs to reduce energy and resource consumption and thus lower operational costs and improve competitiveness. MSME employees will benefit from safer and healthier work environments, positively impacting productivity. Furthermore, the design of new workshops will reduce firms' vulnerability to future environmental or natural-disaster-related disruptions.

29. **Women-owned or led MSMEs.**<sup>16</sup> The Project includes specific gender targets to ensure that existing gender gaps are narrowed. Specifically, 10 percent of the total investments will be earmarked for women-owned or led MSMEs. While the national average of firms with women ownership was 11.3 percent in 2019 and the national average of firms with a women top manager was 3.9 percent in the same year, the share of women-owned or led MSMEs in the earthquake-affected provinces is well below these figures.

30. **Local supply chains.** MSMEs often rely on local suppliers for materials and other inputs. Investing in them will boost demand for local goods and services. As a key component of the business ecosystem, MSMEs can play a crucial role in 'greening' the supply chain, if they adopt strategies to reduce their environmental impact. Having new workshops will

<sup>16</sup> Women-owned or -led MSMEs under this project are defined as (a) MSMEs that are partially or fully owned by women, (b) MSMEs that are managed by women or include women in the management team, (c) MSMEs that have a substantial percentage of women workers (to be defined in the POM), or (d) MSMEs that plan to hire at least one woman in management during the lifetime of the project.



improve their ability to restore their production processes and produce core products. This will help the local supply chain as well as the supply chains across the country and prevent disruptions related to future disasters.

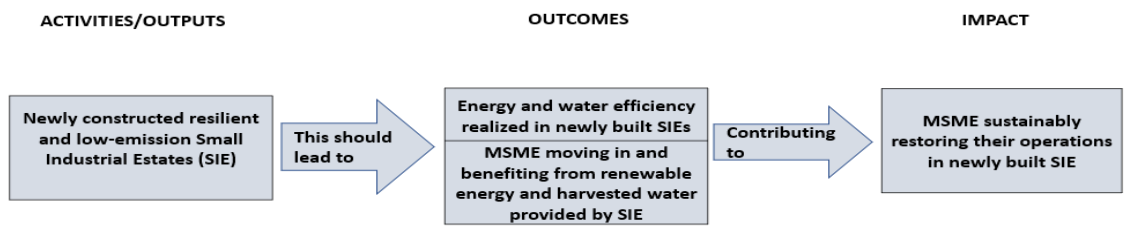
31. **Local populations.** The construction of new SIEs will have a direct impact on job creation for residents. MSMEs are the backbone of the local economy so, in addition to the direct benefits from the construction project itself, investment in MSMEs will have a positive impact on the living standards and the overall economic development of the region. The Project also has the potential to stem migration out of the earthquake region. In this sense, it will benefit the wider community and contribute to a sustained economic recovery.

32. **The GoT and MoIT will benefit from financing and capacity building as part of the Project.** Newly built SIEs and workshops will be a model for future operations aimed at creating new resilient and low-emission SIEs across Türkiye.

#### D. Results Chain

33. **The results framework aligns with a proposed theory of change for the Project, covering key results indicators.** The theory of change’s expected impact is to sustainably restore the operations of MSME in earthquake-affected regions in Türkiye. The Project plans to achieve its objective by constructing new, resilient, and low-emission SIEs. The expected outcomes of the newly built SIE will be measured by intermediate results indicators (IRIs) on energy and water efficiency at the SIE level. IRIs will also measure the start of operations, usage of renewable energy, and harvested water by MSME in the newly built SIE. At the PDO results level, the Project will be measuring the restoration of business activities and new job creation by MSMEs after they start their business activities in the newly built SIEs in comparison to pre-earthquake levels. The third PDO indicator will measure the GHG emission reductions resulting from energy, water and other climate resilience measures in the design and construction of these new SIEs.

### Türkiye Small Industrial Estates Reconstruction and Regional Economic Recovery Project : Theory of Change



#### E. Rationale for Bank Involvement and Role of Partners

34. **The Project addresses the overwhelming need to restore economic activities of MSMEs that suffered tremendous losses in terms of human and physical capital in the 11 earthquake affected provinces.** It also responds to a number of market failures, such as insufficient access to finance, negligible climate resilient and earthquake-resilient buildings and low levels of agglomeration. Access to financing for operating and fixed expenses has long been a significant challenge for MSMEs in Türkiye. Following the earthquakes in February 2023, MSMEs located in the most affected areas faced an additional cash flow crunch, as they face difficulties in borrowing from commercial lenders to rebuild their damaged premises. Even if they had access to external financing, MSMEs may have opted for standard construction techniques to minimize costs and time, instead of following climate-friendly or resilience-focused criteria. Furthermore, MSMEs could have decided to locate their activities in scattered areas that would not allow for an efficient allocation and sharing of resources. However, Turkish society has a collective interest that MSMEs severely affected by the earthquake continue to operate and grow in new premises that are more resilient to earthquakes and aligned with climate mitigation and



adaptation principles. Market forces are not sufficient to efficiently allocate resources, thus exacerbating inefficiencies. The Project addresses these market failures by providing financial support for MSMEs to build and rebuild their premises in a climate-resilient manner.

35. **First, the Project is justified on grounds of improving access to investment finance of MSMEs affected by the earthquake and in urgent need to build new workshops.** Access to finance has been a major and persistent challenge that many MSMEs faced in Türkiye even before the February 2023 earthquakes, especially in less developed regions. The 2019 World Bank’s Enterprise Survey shows that almost 30 percent of firms in Türkiye chose access to finance as their top obstacle to doing business.<sup>17</sup> An OECD report mentions that a relatively high proportion of MSMEs were excluded from access to bank credit after the February 2023 earthquakes, and alternative sources of finance such as micro-finance or capital markets could not help as they are generally underdeveloped in Türkiye.<sup>18</sup> Lack of readily available mobile and immobile collateral, as well as late- and non-payments of invoices represent a considerable strain on the cash flow of Turkish MSMEs. Compounding on these issues restricting the availability of finance, interest rates have also been climbing steeply in Türkiye in the last year – the benchmark interest rate went from 8.5 percent in April 2023 to 50 percent in May 2024, making the cost of borrowing very high. By providing financing to those MSMEs whose workshops in Industrial Estates were heavily damaged or destroyed during the earthquake, the Project helps overcome the financial barriers that prevent MSMEs from fully restoring and improving their operations with respect to pre-earthquake levels.

36. **Second, the Project incentivizes MSMEs to choose green and resilient new premises.** The green structural transformation of firms requires green technologies – construction and production techniques that economize on exhaustible resources and emit fewer greenhouse gases. If markets worked perfectly, natural, and environmental resources would be priced appropriately at full social marginal costs, and technological benefits would be internalized by all firms. However, as firms affected by the earthquake decide where and how to build or acquire new workshops, private and social returns to investments in green technologies do not align, because (i) the development of new technologies generates positive spillovers that are not fully captured by the original investors, and (ii) greenhouse gases (GHGs) are greatly mispriced (in the EU, the price of carbon is now below EU€60).<sup>19</sup> As a result, the cost of green building techniques and material is often too high, techniques may not be easily accessible, or the capacity to deploy them may still be lacking. By following the “Build Back Better” (BBB) framework and financing the construction of climate-adaptive workshops, the Project responds to market failures related to climate vulnerability and insufficient resilience in infrastructure design.

## F. Lessons Learned and Reflected in the Project Design

37. **The Project design builds on lessons learned from the implementation of recent and ongoing Bank projects supporting private sector development in Türkiye and the long-term partnership with the GoT.** Specifically, it incorporates the experience from the Rapid Support for MSEs Project (P174144), which provided reimbursable financing to micro and small firms to avert closure and support employment during the COVID-19 pandemic. The operation met its PDO and exceeded target PDO indicators. The Project design also incorporates emerging lessons learned from several

<sup>17</sup> <https://espanol.enterprisesurveys.org/content/dam/enterprisesurveys/documents/country-profiles/Turkey-2019.pdf>

<sup>18</sup> OECD, “Financing SMEs and Entrepreneurs 2022: An OECD Scoreboard,” OECD Publishing, Paris, Ch. 45.

<sup>19</sup> Dani Rodrik, “Green industrial policy,” Oxford Review of Economic Policy, Volume 30, Number 3, 2014, pp. 469–491.



ongoing operations: the Post-Earthquake MSME Project (P181068), the OIZ Project (P171645) and the Green Industry Project (P179255). In particular, the following lessons are reflected:

- a) Strong commitment and ownership by the GoT. The proposed financial support to firms is a top priority for GoT, and the active involvement of MoIT DGIZ in firm identification, project preparation and implementation has already generated strong ownership;
- b) Importance of institutional capacity of implementing agency and beneficiaries. The implementation of the OIZ Project led by MoIT has shown the importance of early identification of capacity constraints and provision of relevant training and advisory support to prevent delays in project implementation. The experience with the OIZ Project has provided MoIT with good knowledge of World Bank policies and procedures as well as with designing and managing green and sustainable infrastructure in the zones;
- c) A simple application process and transparent selection criteria for MSMEs. The implementation of the Rapid Support for MSEs Project showed how the selection of MSMEs should be based on a simple process that allows beneficiaries to quickly gain access to new workshops.

38. **The Project also employs lessons learned from other post-disaster assistance projects.** Although the Project implements an innovative approach to supporting firms in a post-disaster situation, it deploys the experiences acquired from past projects that delivered earthquake response in Haiti, India, and the 1999 earthquake in Türkiye. These include rapid disbursement for victims, the need for effective field presence to achieve targeting of beneficiaries and the opportunity to achieve female inclusion objectives.

### III. IMPLEMENTATION ARRANGEMENTS

#### A. Institutional and Implementation Arrangements

39. **The Republic of Türkiye will be the Borrower, with MoIT as implementing agency of the Project.** The PIU, which was established within the DGIZ for managing the ongoing OIZ Project (P171645), will manage the Project activities and carry out all fiduciary responsibilities. The PIU has gained significant capabilities and experience in managing the OIZ Project. The PIU capacity will also be expanded by recruiting approximately 20 qualified external consultants or MoIT staff required to effectively handle its expanded responsibility of managing the Project. Finally, the Project will include appropriate environmental and social safeguards systems, as well as a monitoring and evaluation framework and experts.

40. **Using the proposed IBRD loan, DGIZ will directly finance and construct the SIEs and then transfer the property of workshops to beneficiary MSMEs upon signing legally binding individual sales agreements in Turkish Lira with each MSME.** Beneficiary MSMEs will pay the cost of the workshops, including interests, on concessional terms: MoIT will offer beneficiary MSMEs to pay back the costs of the workshops over a 13-year repayment plan at a 3 percent interest rate, including a 3-year grace period, in line with the current Circular between MoTF and MoIT.<sup>20</sup> MoIT will begin collecting repayments from beneficiary MSMEs through Ziraat Bank, a commercial bank that will only serve as a conduit for the financing in exchange for a fee and without taking any credit risk. DGIZ will hire private consulting firms to support the design, supervision, and management of new SIE construction, as well as contractual arrangements with MSMEs. DGIZ will also procure private construction firms to build the new SIEs.

---

<sup>20</sup> The Circular "Principles and Procedures Regarding the Use of Appropriations and Lending for Organized Industrial Zones and Industrial Estates Projects" was issued on January 1<sup>st</sup>, 2021. In the event that MoIT proposes to revise the concessional terms applicable to the sales agreements for workshops financed under this Project, MoIT will consult with the Bank to ensure that the proposed revisions, to be reflected in the POM, remain reasonable within the scope of the project. Changes to the POM must be acceptable to the Bank.



### Flow of Project Funds Chart



41. **DGIZ has gained significant experience in implementing an active World Bank OIZ Project (P171645).** That project was approved in January 2021, became effective in July 2021, and, despite a slow start, has recently improved its performance. The Project has been progressing satisfactorily towards achieving the PDO. The Project has established and maintained a robust PIU of 23 people that have already acquired strong knowledge in World Bank’s procurement, financial management, and environmental and social safeguards. To ensure continuity and efficiency, the same team will dedicate staff and hire approximately 20 additional staff to prepare all the feasibility studies and tender documents for the new Project as soon as it becomes effective.

42. **DGIZ plans to finance design preparation and construction supervision services using national budget and following national public procurement procedures.** This approach utilizes lessons learned from the OIZ Project (P171645) and MoIT’s considerable expertise in this domain, to expedite the implementation of the project and meet the urgent need for rebuilding of disaster and climate-resilient industrial premises following the earthquakes. To minimize any potential risks, the World Bank and MoIT have agreed that procurement of design, review and supervision services will be in line with Section 2.3 of the Bank’s Procurement Regulations<sup>21</sup>, and that a robust set of mitigation measures may be put in place. Measures will include regular site inspections to be carried out by the Bank’s own technical consultants, gaining World Bank approval on the Terms of Reference, Request for Proposals and draft contracts.

### B. Results Monitoring and Evaluation Arrangements

43. **MoIT will recruit or assign a Monitoring and Evaluation (M&E) Specialist.** The M&E Specialist will be responsible for data collection, compilation, reporting and preparation of regular M&E reports for the Project. The Results Framework will enable the implementing agencies to track performance, adjust implementation as needed, and demonstrate the impact of project activities. The POM will include a detailed description of how Project activities will be monitored and

<sup>21</sup> Section 2.3 of the Bank’s Procurement Regulations state that: For contracts that are not financed by the Bank, but are included in the scope of a Bank-financed project, the Borrower may adopt other procurement rules and procedures if the Bank is satisfied that: (a) the rules and procedures will fulfill the Borrower’s obligations to carry out the project diligently and efficiently; and (b) the Goods, Works, Non-consulting Services or Consulting Services to be procured: (i) are specified to a satisfactory quality, are compatible with the other elements of the project, and are consistent with the project objectives; (ii) will be delivered or completed in a timely manner; and (iii) are priced so as not to have an adverse effect on the economic and financial viability of the project.



evaluated, including assigned roles and responsibilities for data collection of key indicators (PDO and IRI) linked to the Project's objective, analysis, reporting, verification, and evaluation. MoIT will evaluate progress through monitoring the agreed results indicators and reporting them to the Bank. The MoIT team will continuously monitor the PDO, and IR indicators listed in the agreed Results Framework and report them to the Bank on an agreed upon periodic basis. In addition, the PIU will conduct project related M&E activities under component 2.

### C. Sustainability

44. **By investing in the construction of resilient, low-emission SIEs, the Project will result in several long-term environmental, economic, and social benefits.** Positive impacts will be sustained over the lifespan of the buildings (and infrastructure) and will include: (i) reduction in energy consumption and GHG emissions; (ii) decrease in operating costs and higher productivity of MSMEs, as well as less disruption to production and livelihoods; and (iii) lower risk to human life posed by climate-related and natural disasters. Component 2 will generate impact beyond the life of the Project by building the capacity of MoIT, as well as SIE-level site management organizational structures, to support innovative MSMEs in the newly built SIEs.

45. **GoT revised its Nationally Determined Contributions (NDC) in 2023 committing to reduce GHG emissions by 41 percent compared to business-as-usual by 2030, and to achieve net zero by 2053.** According to TURKSTAT, industry contributes about 36 percent of total greenhouse gas emissions in Türkiye, most of which result from electricity consumption. By investing in new resilient and low-emission SIEs, the Project will contribute toward the achievement of national climate targets by supporting the green transformation of MSMEs which account for 99% of all firms.

## IV. PROJECT APPRAISAL SUMMARY

### A. Technical, Economic and Financial Analysis

46. **An economic and financial analysis (EFA) has been conducted for the Project to determine the value of the anticipated benefits relative to the costs.** The Project Net Present Value (NPV) is estimated at US\$132.7 million at a 12 percent discount rate<sup>22</sup>, and the Economic Rate of Return (ERR) at 21 percent based on the total project investments. See Annex 1 for an explanation of the EFA model and the assumptions adopted. The analysis for Component 1 is based on improved survival rates for beneficiaries that purchase workshops in newly built SIEs. The assumption is that many beneficiaries would likely fail because of the extensive earthquake damage without the emergency funding provided through this Project. The above calculation also includes the project management support provided under component 2.

47. **In addition to the financial benefits noted above, the Project is expected to result in wider social benefits.** Most importantly, a higher survival rate for businesses in the regions impacted by the earthquake will help improve the overall business ecosystem in these regions, enabling more widespread economic spill overs. These types of returns are difficult to precisely quantify, especially given the wide range of potential beneficiaries (from other businesses to local households). To develop an indicative estimate, this analysis uses a minimum threshold multiplier to demonstrate the wider potential impact. Several social impact investment firms<sup>23</sup> use a minimum threshold US\$2.50 social return for every dollar invested. Based on this estimate, the Project Social Net Present Value (SNPV) is estimated at US\$213.4 million at a

<sup>22</sup> We estimate a 12 percent discount rate as the risk-adjusted opportunity cost of capital. Additional NPV estimates at other discount rates have also been provided as a measure of the sensitivity of our analysis.

<sup>23</sup> Harvard Business Review 2019, *Calculation the Value of Impact Investing*. <https://hbr.org/2019/01/calculating-the-value-of-impact-investing>.





12 percent discount rate and the Social Economic Rate of Return (SERR) at 25 percent. Given the emergency nature of this Project and the importance of MSMEs in the earthquake-impacted provinces, the social returns could be even higher.

48. **The operation is aligned with the goals of the Paris Agreement.** For mitigation, the construction of SIE infrastructure and workshop buildings will apply the Turkish Standards Institute (TSI) Building Rules<sup>24</sup> that include advanced requirements on EE and the use of RE. For adaptation, climate vulnerabilities will be considered, and design and construction measures applied to address them and ensure climate resilience of new buildings and common infrastructure. Alignment of buildings with TSI Building Rules will be certified. The Climate & Disaster Risk Screening (CDRS) suggested a high exposure rating for the Project, where the project location has experienced climate and geophysical hazards in the past and is expected to experience these in the future with high intensity, frequency, or duration. The Project's components as currently designed, together with the Project's broader development context, to modulate the risk from climate and geophysical hazards. There is no/low level of risk to the outcomes' delivery of the Project since it will support the establishment of earthquake-resilient workshops and industrial estates.

## B. Fiduciary

### (i) Financial Management

49. **The Bank will have adequate fiduciary assurance on the use of funds for intended purposes with the agreed arrangements.** The Project will be implemented by the PIU under the DGIZ, which is currently implementing the OIZ Project funded by the Bank. This PIU has satisfactory financial management arrangements in place for the OIZ Project and the same arrangements will be applicable for the Project. The PIU will be responsible for all procurements and payments relating to the goods, works and consultancies that will be financed under the Project. The Project is included in the GoT's investment plan and MoIT will ensure that sufficient funds are allocated in the annual budget laws during the life of the Project. The Interim Unaudited Financial Reports (IFRs) will be submitted on a quarterly basis and the Project financial statements (PFS) will be audited by Treasury Controllers. Traditional disbursement mechanisms for investment loans will be used. There will be one designated account for the Project that will be at the Central Bank of the Republic of Türkiye.

### (ii) Procurement

50. **All Procurement financed by the loan will be carried out in accordance with the World Bank Procurement Regulations for IPF Borrowers.**<sup>25</sup> The World Bank's "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants (revised as of July 01, 2016) ('Anti-corruption Guidelines')" shall also be applicable to the Project. The PIU in DGIZ will be responsible for carrying out the procurement process and managing contract implementation of all contracts. This PIU is currently implementing the OIZ Project (P171645) and has experience with the Bank's Procurement Regulations. MoIT aims to strengthen the capacity of DGIZ by hiring qualified experts including a procurement and contract management specialist. The Project is not expected to include complex procurement and is expected to include primarily civil works for construction of workshops and individual consultants for providing technical and PIU support. These will be procured through competitive procedures with an international or national market approach, as appropriate. A Project Procurement Strategy for Development (PPSD) and a Procurement Plan are being finalized by PIU. The residual procurement risk is determined to be Substantial.

## C. Legal Operational Policies

<sup>24</sup> <https://viewer.tse.org.tr/QDMSNET/BSAT/SL.aspx?L=-1144823936>

<sup>25</sup> Procurement Regulations for IPF Borrowers, Fifth Edition, World Bank, September 2023.



Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Area OP 7.60	No

#### D. Environmental and Social

51. **Both the environmental and social risks are assessed as “Moderate” due to nature of activities and the urban or semi-urban setting where the activities will be undertaken.** The key environmental risks at construction stage include potential adverse impacts due to dust and noise generation, vehicle and machines emissions, generation of construction waste, hazardous material and waste including oil, grease, hydrocarbons as well as Occupational Health and Safety (OHS) issues, including traffic management and safety of local population. In most cases the impacts are limited to direct physical project area and could not have a wider impact. The key social risks include land use related impacts, management of labor (e.g., non-compliance with laws by stakeholders, exploitation of labor, health and safety risks, labor influx), social exclusion, social tensions, public health and safety and Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) risks. An Environmental and Social Management Framework (ESMF) has been prepared for the Project. The ESMF includes guidance and procedures for identifying and mitigating associated environmental and social risks/adverse impacts, as well as implementation, monitoring and reporting arrangements that will ensure adequate implementation of the Environmental and Social Framework (ESF) requirements. The scale and extent of the construction activities and the location settings may in few cases require, in addition to ESMPs, the preparation of site-specific Environmental and Social Impact Assessment (ESIAs) to ensure proper identification of site-specific risks and impacts. This would apply in cases where the locations are close to registered national heritage, cultural heritage, or other sensitive sites, including potential water supply points for the population, which will be determined during the sub-project screening stage. In addition, a Resettlement Framework (RF), Labor Management Procedure (LMP) and Stakeholder Engagement Plan (SEP) have been prepared to ensure compliance with the relevant Environmental and Social Standards (ESSs) of the Bank.

#### V. GRIEVANCE REDRESS SERVICES

52. **Grievance Redress.** Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance mechanisms or the Bank’s Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the Bank’s independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank’s Grievance Redress Service (GRS), please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the Bank’s Accountability Mechanism, please visit <https://accountability.worldbank.org>.

#### VI. KEY RISKS

##### Overall Risk and Explanation



53. **The overall Project risk is assessed to be Moderate.** However, this assessment may change depending on developments in the Turkish economy. Sector strategies, technical design, institutional capacity for implementation and sustainability, and stakeholders' risks are marked as low.

54. **Political and Governance risks are Moderate.** Presidential elections took place in May 2023 and a new government was formed. The governance risk for the Project is low, given that MoIT is the implementing agency for the Project, and it is still implementing other Bank-financed projects. The PIU responsible for implementing the OIZ Project (P171645) will be enhanced with additional experts and will be responsible for preparing and implementing this Project.

55. **The Macroeconomic risk is Substantial.** Türkiye has experienced high inflation rates and foreign exchange risks. Despite still being high, inflation is expected to start declining in the second half of 2024, as a result of the Central Bank of the Republic of Türkiye raising the benchmark policy interest rate and fiscal policy measures. The Turkish lira has experienced sharp depreciation since September 2020, but the policy normalization measures adopted after the May 2023 elections have improved the macroeconomic outlook, reduced macroeconomic uncertainty and eased the pressures on the exchange rate. Inflation trends and exchange rate depreciation have put upward pressure on the costs of construction, which will be at the heart of this Project. The Bank and the GoT will constantly monitor macroeconomic trends and their impact on the achievement of the PDO and adapt the project activities accordingly.

56. **The consolidated Fiduciary risk for the Project is Substantial.** The Procurement risk rating is classified as Substantial, and the financial management risk is Moderate. The procurement risk is deemed to be Substantial due to the following factors: (i) possibility of delays in start of the procurement processes for works due to the lack of technical readiness (technical designs, environmental and social safeguard requirements, etc.), (ii) expected large number of workshop units to be constructed under large value procurement packages for works, (iii) uncertain availability of qualified contractors for carrying out the large works in the Project area following the impact of the earthquake, (iv) fluctuations in the market prices of the construction inputs, (v) prior procurement experience of OIZ PIU is limited to smaller value works contracts. These risks will be mitigated through (i) the milestones for the technical preparation phase of the works contracts will be incorporated in the annual procurement plan which will be required to be submitted at the beginning of each year, (ii) regular (at least quarterly) monitoring reports to be prepared by PIU on the progress of technical preparation and the subsequent procurement process against the annual procurement plan, (iii) grouping the workshop units into manageable size procurement packages for works, (iv) market sounding of prospective bidders and proactive outreach to increase competition, and (v) further strengthen the procurement capacity of the PIU by either appointing additional full-time qualified government staff or if not available then hiring the procurement consultant. The Financial Management risk rating is Moderate. The Borrower will be the Republic of Türkiye and the implementing agency will be MoIT DGIZ. MoIT has experience in handling large-scale financial transactions and projects. The OIZ PIU has gained considerable experience of World Bank financial management requirements and is well placed to carry out this Project.

## Corporate Requirements

57. **Private Capital Facilitation:** The Project has a strong focus on Maximizing Finance for Development (MFD). The Project addresses a binding constraint to MSME activity by financing the construction of workshops in SIEs to be transferred to MSMEs heavily impacted by the earthquakes of February 2023, which qualifies it as MFD-enabling.

58. **Gender:** Gender disparities are evident in Türkiye's MSME landscape. Estimates suggest that women-owned or led businesses constitute approximately 8-11 percent of total firms.<sup>26</sup> However, in the 11 earthquake-affected provinces, the

<sup>26</sup> KAGIDER, "Views and Demands on Gender Equality and Women's Economic Empowerment," 2019; Mert, "Women's Entrepreneurship in Turkey: Recent Patterns and Practices," 2021.



labor force participation rate for women is significantly lower than the national average.<sup>27</sup> According to the 2019 Enterprise Surveys, the proportion of women-owned firms in southeast Anatolia (1 percent) and central east Anatolia (1.8 percent) – the regions where most of the new SIEs will be located – are significantly lower.<sup>28</sup> Contributing factors to this wide gender gap include a high involvement in unpaid care and domestic work, which increased following the earthquake, and gender roles that restrict women’s participation in formal employment. According to a UN WOMEN survey conducted in April 2023<sup>29</sup> and a KAGIDER-UN WOMEN brief,<sup>30</sup> 88 percent of women entrepreneurs surveyed after the earthquakes halted their business operations, and 50 percent were unable to resume due to damaged infrastructure and equipment losses. A significant 70 percent reported an increased burden of caregiving responsibilities for children, the elderly, and disabled persons. An ILO post-earthquake report further notes that skill mismatches and a lack of sector-specific training severely limited women’s business progress.<sup>31</sup> At the sectoral level, the Project targets manufacturing as well as maintenance and repair services, which traditionally include male-dominated activities. To address these challenges and close the gap in MSMEs being owned or managed by women, the Project’s PIU plans to advertise the application process to eligible women-owned or led MSMEs and prioritize them before opening the process to the wider pool of eligible applicants via a lottery system. The target is to reach 10 percent of women-owned or led -MSMEs financed via component 1 and acquiring a new workshop, which will also have female-friendly equipment and facilities. The Project will also encourage women entrepreneurs to apply for a workshop through activities conducted via component 2, including (i) the introduction of a “trusted counsellor” for women, or a women-dedicated hotline, which can be used to confidentially express concerns that can arise in the workplace; (ii) the launch of an awareness campaign to influence public perceptions about women’s work in SIEs; and (iii) the provision of entrepreneurial or technical skills training to women.

59. **Citizen Engagement:** The Project includes a citizen-oriented design. During implementation, as a part of stakeholder engagement activities, MoIT DGIZ will carry out regular dialogue with beneficiary MSMEs to provide them with an opportunity to voice their challenges, needs, and priorities regarding the industrial workshops’ construction and operationalization in the newly established SIEs. These dialogues can also serve as beneficiary feedback mechanism by enabling firms to provide feedback on the functionality of SIEs (e.g., ease of access, transparency). This feedback can help improve the implementation of project activities. MoIT DGIZ plans to conduct a satisfaction survey before and after the construction and operationalization of SIEs to solicit beneficiaries’ feedback and assess whether and how the SIEs meet their needs. The findings of the survey will be reflected in the project’s intermediary results indicator, which shows the share of beneficiary MSMEs reporting that are satisfied with their new workshops. MoIT DGIZ will establish a robust and accessible grievance mechanism, which will solicit inputs, complaints, and feedback from all project stakeholders and beneficiaries as outlined in the SEP (see section on Grievance Redress Services). This mechanism should be widely publicized in Project locations and offer an array of communication channels (e.g., hotline, website, email, mail, complaint boxes) that will be adapted to beneficiaries’ capacity and needs.

<sup>27</sup> UN WOMEN, “UN WOMEN Brief on Earthquake in Türkiye: Impacts and Priorities for Women and Girls,” April 6, 2023.

<sup>28</sup> World Bank, “Breaking Barriers: Female Entrepreneurs Who Cross Over to Male-Dominated Sectors,” 2022.

<sup>29</sup> UN WOMEN, “UN WOMEN Brief on Earthquake in Türkiye: Impacts and Priorities for Women and Girls,” April 6, 2023.

<sup>30</sup> KAGIDER and UN WOMEN, “Women Entrepreneurs in the Earthquake Region. Needs Analysis,” Rapid assessment based on interviews conducted on February 27-March 8, 2023.

<sup>31</sup> ILO, “Assessing the Local Labor Market Dynamics and Skills Needs Following the Earthquakes in Türkiye,” 2023.



VII. RESULTS FRAMEWORK AND MONITORING

PDO Indicators by PDO Outcomes

Baseline	Closing Period
<b>Number of beneficiary MSMEs that start activities in resilient and low-emission workshops</b>	
<b>Number of beneficiary MSMEs that start activities in resilient and low-carbon-emission workshops (Number)</b>	
Jun/2024	Jun/2028
0	1,300
➤ Out of which, number of women-owned- or led beneficiary MSMEs (Number)	
Jun/2024	Jun/2028
0	130
<b>Share of beneficiary MSMEs that retain or increase their employment post-earthquake</b>	
<b>Share of beneficiary MSMEs that retain or increase their employment post-earthquake (Percentage)</b>	
Jun/2024	Jun/2028
0	75
<b>Reduction in net greenhouse gas (GHG) emissions by SIEs per year</b>	
<b>Reduction in net greenhouse gas (GHG) emissions by SIEs per year (Metric tons/year)</b>	
Jun/2024	Jun/2028
0	147,030

Intermediate Indicators by Components

Baseline	Closing Period
<b>Construction of Resilient and Low-Emission SIEs</b>	
<b>Share of beneficiary MSMEs that maintain or increase their revenues post-earthquake (Percentage)</b>	
Jun/2024	Jun/2028
0	70
<b>Share of beneficiary MSMEs reporting that they are satisfied with their new workshops (Percentage)</b>	
May/2024	May/2028
0	80



<b>Generation capacity of energy constructed or rehabilitated (Megawatt)</b>	
Jun/2024	Jun/2028
0	120,000
<b>➤ Renewable energy generation capacity (other than hydropower) constructed under the project (Megawatt)</b>	
May/2024	May/2028
0	120,000
<b>Share of beneficiary MSMEs using at least 10% of their electricity consumption from renewable sources (Percentage)</b>	
Jun/2024	Jun/2028
0	50
<b>Volume of rainwater collected and used by beneficiary MSMEs (Cubic Meter(m3))</b>	
May/2024	May/2028
0	639,000
<b>Number of energy efficient workshops constructed (Number)</b>	
Jun/2024	Jun/2028
0	1,500
<b>Technical Assistance and Project Management</b>	
<b>Number of SIE awareness and promotional events targeting women (Number)</b>	
Jun/2024	Jun/2028
0	5



## ANNEX 1: Project Economic and Financial Analysis

- An economic and financial analysis (EFA) has been conducted across both project components to determine the value of the anticipated benefits relative to the costs associated with this Project.** The Project Net Present Value (NPV) is estimated at US\$132.7 million at a 12 percent discount rate<sup>32</sup>, and the Economic Rate of Return (ERR) at 21 percent based on the total project investments.
- In reference to this project valuation, several points are worth noting.** First, this calculation is indicative, using expected average parameters for the project beneficiaries and the resulting impact of the project components. While these assumptions are based on the project team's discussions with potential beneficiaries along with results of other projects and economic literature, they are not precise representations of the impact that the Project will have. The exercise of financially modelling the Project helps to ensure that project funds are being allocated to investments and activities that will provide a return to the country/society and local population, along with helping to identify key risks and thresholds for the Project to achieve its desired impact. Additionally, international development projects often target regions and sectors where the risk is high since these types of projects can specifically take on higher risk investments because of the social good that could result from them—as such, financial valuations of these investments may not be as high as those in other regions, but the social value of such investments could be considerably higher. Since the social return of investments is extremely difficult to estimate precisely, the analysis focuses on direct financial returns to beneficiaries. That said, the analysis attempts to estimate these returns to better capture the overall impact of the Project.
- That said, our methodology (detailed below) accounts only for the Project's impact on direct beneficiaries rather than using a broader multiplier approach which would encompass positive externalities and spillover effects.** Additionally, investments under this Project are expected to facilitate further investments from other donor funds, which could further amplify social returns. The value of such externalities is difficult to estimate; however, the analysis below provides an estimate of the Social Economic Rate of Return (SERR). While this is not an exact estimate of the Project's value, this higher value of broader social benefits from the Project is worth underscoring.
- The analysis calculates estimates based on the following parameters.** This methodology builds on analyses conducted for the Türkiye: Post-Earthquake MSME Recovery Project (P181068):
  - Number of beneficiaries:** Based on data on the number of Industrial Estates and MSMEs impacted by the earthquake, the Project has defined a target of building 1,600 workshops across multiple SIEs. The analysis assumes that the MSMEs across these workshops will include 95 percent micro enterprises, 4 percent small, and 1 percent medium. This breakdown is based on the number of MSMEs across the country that were affected by the earthquake. Precise numbers are shown in the table below.
  - Channels of impact:** The primary assumption in this analysis is that the failure rate of beneficiaries would be significantly higher without the support provided by the Project. The analysis assumes that without the Project, failure rates would be 90 percent due to the extensive earthquake damage. With the support of the Project, failure rates are assumed to be reduced to 30 percent of these beneficiaries, along with an additional 5 percent of growth for two years. We estimate a steady state revenue growth rate of 1 percent for surviving firms without the project investments.

<sup>32</sup> We estimate a 12 percent discount rate as the risk-adjusted opportunity cost of capital. Additional NPV estimates at other discount rates have also been provided as a measure of the sensitivity of our analysis.



- Timeframe of impact: We estimate that impact of the component investments will occur one year following the actual support.

5. **The above assumptions are supported by a wide range of studies in different regions on the impact of different types of support services for SMEs.** While specific data on this type of innovation support isn't available, we have provided a summary of the different supporting studies below:

- Sarder et al. (1997) study "The Importance of Support Services to Small Enterprises in Bangladesh" find 5-16 percent increase in employment, sales and productivity with technology adoption support provided to SMEs.
- Tan & Lopez-Acevedo (2005) look at the impact of SME programs in Mexico using panel firm data and find that 9-14 percent improvement in training and 9 percent improvement in technology absorption have been achieved. Various SME programs – Business Advisory Services, Technology Development, Credit, Supplier Development (1992 – 2000) in Chile presented similar results.
- Lopez-Acevedo & Tan (2010), "Impact Evaluation of SME Programs in Latin America and Caribbean" found an 8 percent increase in wages and 9 percent increase in productivity as a result of these programs.
- A Harvard Business Review Study conducted by Anne Marie Knott calculates the impact of R&D investments in the US by estimating a *Research Quotient* (RQ) which defines a relationship between firm inputs (capital, labor, and R&D investments) and firm output (revenues) based on regression analysis of American firms. Their analysis estimates that a 10 percent increase in *Research Quotient* results in an increase in market value of 1.1 percent, which can translate to a 10-20x multiple in firm revenues. Since this analysis is based on R&D investments in established firms rather than start-ups, we have increased revenue growth assumptions for the project's start-up beneficiaries.

6. **Additional assumptions are provided in the table below.**

	Micro	Small	Medium
Number of beneficiaries	2,427	102	26
Failure rate w/o project intervention	90%	90%	90%
Failure rate w/ project intervention	30%	30%	30%
Average annual revenue (TRY)	5,000,000	50,000,000	250,000,000
Average annual revenue (US\$)	260,000	2,600,000	13,000,000
Annual revenue growth (w/o project)	1%	1%	1%
Additionality to growth rate	5%	5%	5%
Number of years that additionality applies	2	2	2

7. **With the assumptions noted above, the component 1 valuation and other key metrics are estimated as follows:**

- NPV at a 15 percent discount rate: US\$72.3 million
- ERR: 21 percent
- NPV at a 12 percent discount rate: US\$132.7 million
- NPV at a 10 percent discount rate: US\$185.2 million

**Sensitivity analysis:**

- Reducing the estimated number of beneficiaries by 20 percent reduces the ERR to 14 percent.





- Increasing the estimated number of beneficiaries by 20 percent increases the ERR to 27 percent.
- Increasing the assumed failure rates with the project interventions from 30 percent to 40 percent reduces the component ERR to 15 percent.
- Reducing the assumed failure rates with the project interventions from 30 percent to 20 percent increases the component ERR to 26 percent.

### **Social returns**

8. **In addition to the financial benefits noted above, the Project is expected to result in wider social benefits.** Most importantly, access to more resilient workshops will enable a higher survival rate for businesses in the regions impacted by the earthquake; this will help improve the overall business ecosystem in these regions, enabling more widespread economic spill overs. These types of returns are difficult to precisely quantify, especially given the wide range of potential beneficiaries (from other businesses to local households). To develop an indicative estimate, this analysis uses a minimum threshold multiplier to demonstrate the wider potential impact. Several social impact investment firms<sup>33</sup> use a minimum threshold US\$2.50 social return for every dollar invested. Using this threshold as an estimate for the additional social return, the Project Social Net Present Value (SNPV) is estimated at US\$213.4 million at a 12 percent discount rate and the Social Economic Rate of Return (SERR) at 25 percent. Given the emergency nature of this Project and the importance of MSMEs in the earthquake-impacted provinces, the social returns could be even higher as a large part of the economy could collapse without it.

9. **The SNPV estimates at various discount rates are noted below:**

- NPV at a 15 percent discount rate: US\$137.7 million
- NPV at a 12 percent discount rate: US\$213.4 million
- NPV at a 10 percent discount rate: US\$278.7 million

### **Sensitivity analysis:**

- Reducing the estimated additional social returns to US\$1.50 per dollar invested reduces the Project SERR to 22 percent.
- Increasing the estimated additional social returns to US\$3.50 per dollar invested increases the Project SERR to 28 percent.

---

<sup>33</sup> Harvard Business Review 2019, *Calculation the Value of Impact Investing*. <https://hbr.org/2019/01/calculating-the-value-of-impact-investing>.



## ANNEX 2: Institutional Arrangements - Financial Management

- 1. The Bank will have adequate fiduciary assurance on the use of funds for intended purposes with the agreed arrangements.** The Bank will sign the Loan Agreement with MoTF. The Law on Public Finance and Debt Management No.4749 (the Debt Law) describes the procedures for international borrowing in the Republic of Türkiye. The Debt Law classifies the international borrowing under three categories: allocation, on-lending, and guarantee. The Debt Law authorizes MoTF to allocate foreign financed loans to general budget institutions and, since MoIT is a general budget institution, the loan proceeds will be disbursed by MoIT. MoIT is subject to the Public Financial Management and Control Law which is the framework law on PFM in Türkiye.
- 2. The PIU at DGIZ currently managing the Türkiye OIZ Project (P171645), will also be responsible for the implementation of the Project activities and carry out all fiduciary responsibilities.** The PIU has gained significant capabilities and experience in managing the OIZ Project. The PIU consists of five units: (i) technical management unit, (ii) financial management unit, (iii) procurement unit, (iv) social & environmental unit, and (v) monitoring & evaluation unit. The PIU is supported by technical departments of the DGIZ. Budgeting, payments, accounting, reporting, and preparing for the audit for the Project are conducted by the Financial Management Unit of the PIU. The PIU capacity will be enhanced with additional staff/consultants to effectively handle its expanded responsibilities.
- 3. Public Financial Management and Control Law requires investment projects to be included in the Annual investment programs.** The Project is included in the 2024 Investment Program. MoIT through collaboration with the Presidency of Strategy and Budget will ensure that sufficient funds are allocated in the annual budget laws for the Project.
- 4. The contracts for both components under the Project will be signed between DGIZ and the contractor/supplier/consultant.** The contractors/consultants will submit the progress payments/ payment requests to the PIU and MoIT technical staff will verify the actual work conducted through site visits. Following their approval, the financial department of the PIU will prepare the payment order (Ek 3) and will send it to the General Directorate of Public Accounting (GDPA) office at MoIT for processing. Following GDPA's approval the payment order will be sent to the Central Bank of the Republic of Türkiye to be paid to the contractors/consultants account from the designated account.
- 5. The PIU will maintain detailed accounts of the Project covering both components in Euros, in the accounting software currently used for OIZ Project.** The accounting entries will be based on the information received from the Central Bank of the Republic of Türkiye payment confirmations. The software includes adequate security levels and facilitates reporting in foreign currency. The Interim Unaudited Financial Reports as well as the end of the year financial reports will be generated automatically from the system. MoIT has an Internal Audit Department and the inclusion of Project transactions in their annual audit programs will be discussed during project implementation. A detailed financial management manual will be prepared for the Project during implementation.
- 6. The Project will use traditional disbursement method using Designated Accounts.** The minimum application size for payments directly from the Loan Account for issuance of Special Commitments as well as the statements of expenditure (SOE) limits will be described in the disbursement letter. Full documentation in support of SOEs would be retained by MoIT for at least two years after the Bank has received the audit report for the fiscal year in which



the last withdrawal from the Loan Account was made. This information will be made available for review during supervision by Bank staff and for annual audits. There will be one Designated Account for the Project that will be opened at the Central Bank of the Republic of Türkiye. All payments to the contractors, suppliers and consultants will either be made directly from the loan account (direct payment) or from the Designated Account with the authorization of the responsible personnel.

7. **MoIT will maintain records and will ensure appropriate accounting for the funds provided for the Project.** The IFRs will be prepared on a quarterly basis and will be submitted to the Bank no later than 45 days after the end of the quarter. The IFR templates will be attached to the minutes of negotiations.

8. **As part of the Bank’s auditing requirements, the Project financial statements (PFS) will be subject to external auditing.** The first set of audit reports will be submitted to the Bank before June 30th of the year following the calendar year in which the first disbursement from the loan has been made. The PFSs will be audited by the Treasury Controllers in accordance with International Auditing Standards. The Treasury Controllers are the external auditors for all projects implemented by the ministries in Türkiye. The Terms of Reference for the Audit are attached to the Minutes of Negotiations. Table 1 presents the audit reports and their due dates.

**Table A2.1. Project audit reports and due dates**

<b>Audit Report</b>	<b>Due Date</b>
Entity financial statements	Not applicable
Project financial statements (PFS) for the IBRD loan.	Within six months after the end of each calendar year, and at the closing of the Project.



### ANNEX 3: Financial Intermediaries Tag Assessment

- 1. Project financing terms.** MoIT DGIZ<sup>34</sup> will be the implementing agency and will tender the construction of 7 new SIEs and 1,600 workshops and common infrastructure to contractors (using World Bank procurement regulations). Once SIEs are built, MoIT will transfer the workshops to beneficiary MSMEs upon signing individual sales agreements with each enterprise in Turkish Lira. MoIT will offer beneficiary MSMEs to pay back the costs of the workshops over a 13-year repayment plan at a 3 percent interest rate, including a 3-year grace period, in line with the current Circular between MoTF and MoIT. MoIT will begin collecting repayments from beneficiary MSMEs through Ziraat Bank, a commercial bank that will only serve as a conduit for the financing in exchange for a fee without taking any credit risk.
- 2. Eligibility criteria and selection process.** The targeted beneficiaries of this program are MSMEs, 99 percent of which are micro and small enterprises, who previously owned or leased industrial workshops in Industrial Estates located in the earthquake-affected provinces, and whose workshops were heavily or completely damaged. In addition, manufacturing and maintenance and repair services MSMEs whose workshops were not formally in Industrial Estates prior to the earthquakes, but also suffered damages or were destroyed, will also be eligible to apply. These businesses currently have limited access to bank finance, even though many continue to be viable from a financial standpoint. MoIT and the World Bank team have set forth clear eligibility criteria (size, sector, viability, and damages suffered)<sup>35</sup> and a transparent selection process, described in the Project Appraisal Document (PAD), to be able reach and support the targeted beneficiaries.
- 3. Role of the financial institutions (Fis).** The proposed program is tailored to assist un-bankable yet viable MSMEs with concessional financing, as part of a major national post-earthquake recovery initiative. It is designed not to compete with FIs, as these institutions will not engage with micro and small enterprises, who typically face challenges in securing commercial bank financing due to, inability to raise sufficient collateral, poor business plans and loan proposals and, especially now, prohibitively high commercial interest rates. The overall MSME lending portfolio of commercial banks in Türkiye has not exceeded 25 percent on average, and slightly increased in the last 2 years to 27 percent. Commercial banks typically request 200 percent collateral guarantees from MSMEs and offer only short-term maturity loans (2-3 years) at very high interest rates (45-50 percent). These terms and requirements present a serious challenge for MSMEs' access to finance.
- 4. The entire MoIT earthquake reconstruction program is, in essence, a social program of providing on highly concessional terms the investment capital to acquire new workshops, resume or grow their business and generate new jobs.** The PAD examines the rationale for the Project as well as alternative options in greater depth. It is clear, however, that the Project does not in any way undermine the role of existing FIs and may even support the FI market through re-generating business activity and incentivizing MSMEs to improve their overall business model, including adhering to financial discipline and better management.
- 5. Fiscal costs of the Project.** The GoT, as represented by MoTF, will bear the temporary fiscal costs of the Project through the national budget, as part of the earthquake response and recovery effort. In this case, the Republic of Türkiye will be the Borrower and MoIT will disburse loan resources.

<sup>34</sup> A PIU for the Bank-funded OIZ Project is already in place in DGIZ and is familiar with Bank policies and procedures, including procurement, FM, and environmental and social safeguards. The same PIU will manage this Project and hire additional staff to implement this Project.

<sup>35</sup> The degree of damage to workshops was determined by an independent assessment by the MoEUCC after the earthquakes.



6. **Monitoring of re-payments and follow up in case of default.** MoIT has an established PIU at the DGIZ, which is currently managing another World Bank-financed project (OIZ Project) and has gained substantial experience in procurement, FM, E&S and all other aspects of managing a Bank-funded project. The PIU will oversee the new project's activities and, in coordination with Ziraat Bank, will monitor and collect repayments. The terms and conditions of the individual financing agreements between each beneficiary MSME and MoIT were discussed during appraisal and will be included in the POM. These terms and conditions will be in line with all Bank Policies to provide beneficiary sub-borrowers with fair and transparent process in case of late payment or default.



## ANNEX 4: Climate Mitigation and Adaptation Measures

1. **The Project will finance the construction of 7 new SIEs<sup>36</sup>, including approximately 1,600 climate resilient and low-emission workshops and sustainable common infrastructure for a total cost of US\$587.5 million.** The project utilizes ‘Build Back Better’ and green building practices to reduce the carbon footprint and enhance climate resilience of Türkiye’s (industrial) built environment.
2. **All pathways to net-zero require profound changes to the built environment which means reaching net-zero emissions across all activities in the building lifecycle.** The construction sector has a vital role to play as it is responsible for 33 percent of global GHG emissions<sup>37</sup>. The majority of these emissions occur when the building is in operation but a significant amount also comes from carbon emissions generated during the material extraction, manufacturing, transportation, assembly, maintenance and end-of-life disposal of buildings.
3. **The building sector as one of the most important drivers of the Turkish economy, is named as a central pillar for achieving the goals stated in the Nationally Determined Contribution (NDC)<sup>38</sup>.** The NDC goals recognize that to decarbonize the building sector efforts need to be geared toward reducing emissions from the use of the building as well as emissions embedded in materials used in the construction processes (embodied carbon).

### Climate Mitigation

4. **Reductions in operational carbon in new SIEs will be achieved through building low-emission workshops and sustainable common infrastructure which ensure both lower energy usage through targeted energy efficiency (EE) measures as well as the introduction of renewable energy supply (see figure 1).** Energy efficiency measures will include thermal insulation, heat-controlled windows, LED lighting and motion sensors and building design to maximize passive heating, whereas low carbon energy supply will be achieved through the use of on-site renewable electricity generation in the form of rooftop solar panels (see figure 1).

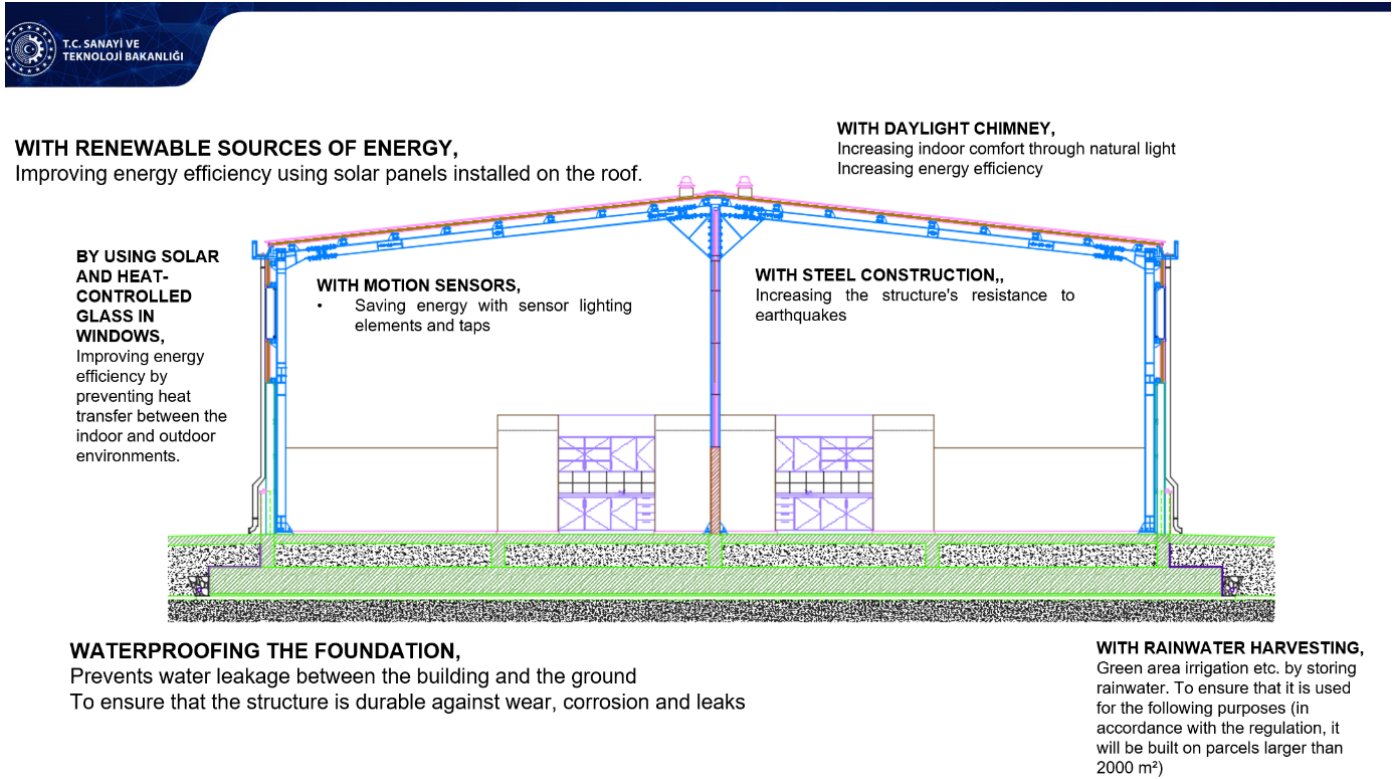
<sup>36</sup> In case the need arises, additional earthquake-affected provinces and sites for new SIEs may be considered for financing, subject to site eligibility and prioritization criteria, identified in Annex 5, and with the agreement of the Bank.

<sup>37</sup> Sizirici B, Fseha Y, Cho CS, Yildiz I, Byon YJ. A Review of Carbon Footprint Reduction in Construction Industry, from Design to Operation. Materials (Basel). 2021 Oct 15;14(20):6094. doi: 10.3390/ma14206094. PMID: 34683687; PMCID: PMC8540435.

<sup>38</sup> Republic of Türkiye Updated First NDC: [https://unfccc.int/sites/default/files/NDC/2023-04/T%C3%9CRK%C4%B0YE\\_UPDATED%201st%20NDC\\_EN.pdf](https://unfccc.int/sites/default/files/NDC/2023-04/T%C3%9CRK%C4%B0YE_UPDATED%201st%20NDC_EN.pdf)



Figure A4.1: Low-emission and climate resilient workshop design



5. As efforts to decarbonize the operational aspects of the built environment are advancing at a pace, the focus of policymakers, investors and developers is turning to emissions generated throughout the lifecycle of the construction project. The construction of new SIEs will achieve reduction of carbon emissions embedded in building processes and materials through:

- **Sourcing of low emission materials:** MoIT will source low-emission building materials, prioritizing the use of recycled and locally sourced materials whenever feasible. The materials initially agreed upon include:
  - Sustainable Steel Usage: Türkiye is the EU's second-largest steel producer. According to the MoIT publication, "Low Carbon Roadmaps of Steel Sector<sup>39</sup>," Türkiye utilizes two primary steel production methods. The first method involves blast furnaces and basic oxygen furnaces, which produce steel from iron ore with an emission intensity of 2.20 tons CO<sub>2</sub>eq per ton of steel. The second, more environmentally friendly method involves using electric arc furnaces (EAF) to recycle steel, significantly reducing emission intensity to just 0.29 tons CO<sub>2</sub>eq per ton of steel. MoIT plans to specify the use of recycled steel produced via EAF methods in the tender documents.
  - Use of CEM II Class Cement: Unlike CEM I cement, also known as Ordinary Portland Cement (OPC), which consists mostly of clinker (around 95% or more) and is known for its high energy consumption and significant CO<sub>2</sub> emissions, CEM II cement is a blended variant containing 65% to 94% clinker. The remainder consists of supplementary cementitious materials (SCMs) such as slag, fly ash, limestone, or pozzolana, which not only require less energy to produce but also substantially reduce or neutralize

<sup>39</sup> <https://www.sanayi.gov.tr/merkez-birimi/6f188a931f68/projeler/b81284>



carbon emissions. Türkiye's average carbon intensity for producing CEM I cement is 0.38 tons CO<sub>2</sub>eq per ton<sup>40</sup>. However, CEM II cement production emits approximately 20% less CO<sub>2</sub>eq per ton. MoIT will include minimum CEM II cement usage criteria in the tender documents for cement and concrete requirements.

- The project team has discussed with MoIT sourcing of low emission building materials specifically the use of recycled and locally sourced materials where possible. Currently, MoIT is planning to use rockwool, recycled steel, and green cement for the construction of workshops. MoIT is also looking into prefabricated low-emission internal wall structure of the buildings.
  - **Use of prefabricated materials** and design which will optimize the use of materials and generate reductions in carbon emitted during the manufacturing, transport, assembly and eventual decommissioning of workshops. One study conducted a literature review of 27 case studies found that average a 15.6% reduction in embodied relative to projects built exclusively with on-site construction methods<sup>41</sup>. Another study concluded that modular building results in a reduction of 46.9 percent GHG emissions as compared to a conventional site-built building<sup>42</sup>.
  - **Ensuring durability of the materials** which will be used in the development of new workshops such as steel and rockwool will minimize the need for frequent replacements and will extend the buildings' useful life. This will further contribute to lowering embodied carbon of the building project.
  - **Recyclability of materials**- materials used in SIE buildings such as steel, rockwool will align with circular economy principles by enabling reuse and minimizing waste when the buildings are eventually decommissioned.
6. **Implementing water conservation and efficiency measures, will decrease the energy required for water supply and treatment, thereby reducing GHG emissions.** Low-flow fittings, tap motion sensors, rainwater water harvesting and installation of wastewater treatment plant will ensure the lower use and circularity of the resource. The planned package wastewater treatment plant will meet treatment needs of small populations in most efficient way and will ensure ease of operation. The units of PWWTP will have modular configuration so that the system can be operated according to increasing or decreasing capacity needs whereby units can be taken into or out of operation (see Figures 2 and 3).

<sup>40</sup> Low Carbon Roadmaps, MoIT, <https://www.sanayi.gov.tr/merkez-birimi/6f188a931f68/projeler/b81284>

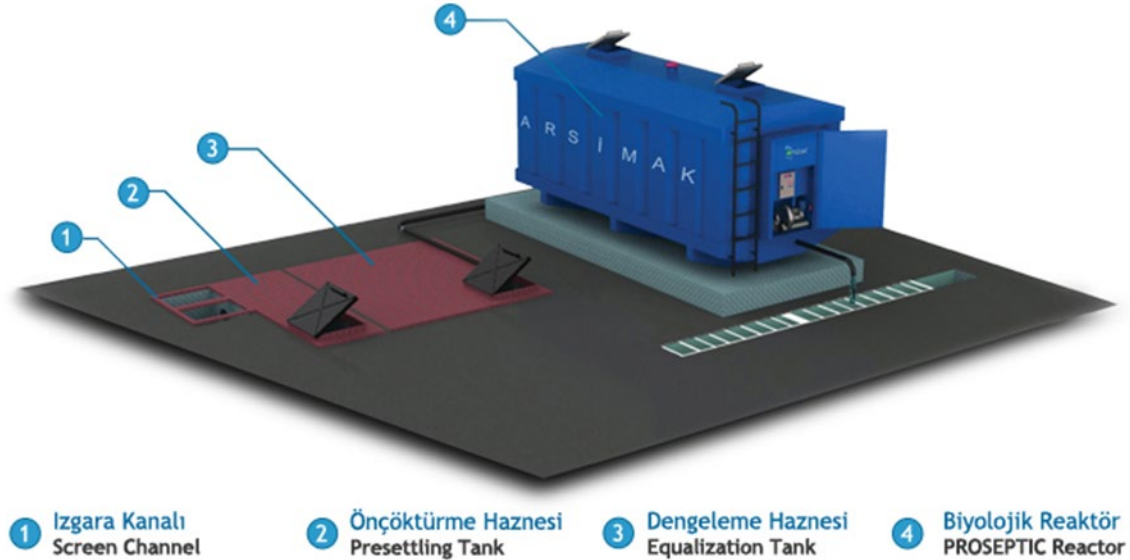
<sup>41</sup> Yue Teng, Kaijian Li, Wei Pan, Thomas Ng, Reducing building life cycle carbon emissions through prefabrication: Evidence from and gaps in empirical studies, Building and Environment, Volume 132, 2018

<sup>42</sup> Hamza Pervez, Yousaf Ali, Antonella Petrillo, A quantitative assessment of greenhouse gas (GHG) emissions from conventional and modular construction: A case of developing country, Journal of Cleaner Production, Volume 294, 2021





Figure A4.2: Wastewater treatment plant



7. The treatment process of the planned WWTP will involve a combination of mixing methods determined through technical calculations of wastewater and the chemical precipitation method. Various chemicals will be applied to the water to initiate intended reactions, allowing for the separation of chemical elements causing water pollution. Industrial Treatment applications are facilities where both chemical and biological treatments are conducted, enabling the treatment of wastewater from enterprises operating in SIEs to meet discharge limits or be repurposed as utility water. Additionally, the system will effectively eliminate odor and other nuisances.

Figure A4.3: Package Wastewater Treatment Plant





Table A4.1: Cost breakdown of climate mitigation investments

Cost Element	Estimated Cost of Climate Mitigation Solution (US\$)	% of Total project cost
Prefabricated low-emission steel	132,891,819	22.56
Rock wool Insulation	52,315,367	8.88
Heat controlled windows	6,310,204	1.07
LED lighting and motion sensors	6,674,074	1.13
Daylight chimney	476,276	0.08
Rooftop solar power plant (SPP)	46,171,483	7.83
Wastewater Treatment Plant (WWTP)	1,920,000	0.33
Rainwater Harvesting	1,582,500	0.27
Low-flow tap fitting and motion sensos	1,152,752	0.20
Low-emission gypsum (internal walls)	34,679,156	5.89
Green Cement	59,326,705	10.07
<b>Total</b>	<b>343,500,336</b>	<b>58.31</b>

8. The ‘Green Industrial Estate’ certification is a voluntary scheme utilized to promote sustainable and environmentally friendly building practices through the development and adoption of green building standards. The ‘Regulation on Green Certificates for Buildings and Settlements’ 2022 sets forth procedures and principles of the establishment of Green Industrial Estate certification schemes in Türkiye aimed at reducing negative effects of buildings and settlements and to use natural resources and energy efficiently<sup>43</sup>. The Turkish Standards Institute (TSI)<sup>44</sup> is responsible for developing and implementing standards across various sectors in Türkiye, including construction and building practices. The Green Industrial Estate certification is specifically developed for the Turkish context, the country’s building industry, climate conditions and regulations. These standards aim to enhance the environmental performance, energy efficiency, resilience of buildings, water conservation, indoor air quality, materials and resources, site selection, and innovation thereby contributing to sustainability and climate change mitigation and adaptation efforts. MoIT will utilize TSI ‘Safe Green Building’ Certificate procedures for the certification<sup>45</sup> of SIE workshops which will ensure that the buildings comply with advanced (above the mandatory) requirements for energy efficiency, the

<sup>43</sup> [tur172990.pdf \(fao.org\)](#)

<sup>44</sup> Known in Turkish as the “Türk Standardları Enstitüsü”

<sup>45</sup> <https://viewer.tse.org.tr/QDMSNET/BSAT/SL.aspx?L=-1144823936>



use of renewable energy etc. MoIT is currently in discussions with the TSI to arrange the first of its kind certification of industrial workshops in Türkiye and the cost is likely to be in the region of \$50,000.

**Table A4.2: Green Industrial Estate certification cost**

Cost Element	Estimated Cost (US\$)	% of Total cost (Component 1)
Implementation of 'Green Industrial Estate' certification for 7 SIEs	50,000	0.008

9. **To further expedite the green transformation of MSMEs during the operational phase of SIEs, the project will provide technical assistance (TA) under component 2 to beneficiary MSMEs** to address gaps they may encounter while transitioning to sustainable production methods. In addition to capacity building for MSMEs, the project will also organize and host knowledge transfer on a national level to promote sustainable building practices.

**Table A4.3: Green transformation capacity building**

Cost Element	Estimated Cost (US\$)	% of Total cost (Component 2)
Provision of advisory activities at SIE level aimed at supporting MSMEs from various manufacturing sectors to innovate and seize business opportunities related to green value chains and circular economy	500,000	0.08
Training and Capacity-building for stakeholders including organizing and hosting nationwide seminars and workshops to facilitate knowledge dissemination and exchange of best practices derived from international and domestic experiences in climate- and disaster-resilient construction	1,000,000	0.17

## Climate Adaptation

10. **Türkiye’s geographic, climatic, and socioeconomic conditions make it highly vulnerable to the impacts of climate change, making climate adaptation and resilience high priorities.** The country’s exposure to climate-related hazards, namely flooding (flash floods and urban flooding), landslides, water scarcity and droughts, heat waves and wildfires, is considered high and further contributes to the country’s vulnerability<sup>46</sup>. By Building Back Better the project will incorporate design and technologies which will mitigate against exposure to climate-related shocks.

- **Heat resistant building design** which incorporates insulation and heat-controlled windows will prevent heat transfer between the indoor and outdoor environment. **Flood resistant building and infrastructure design** including waterproof foundations which will prevent water leakage between the building and the ground to ensure that the structure is durable against wear, corrosion and leaks. Rock wool insulation is also known as a waterproof building material which will guard against damp and mold resulting from severe weather events. Permeable pavements will also be considered as part of the project.
- **Adaptive landscaping** refers to strategic design and management of landscapes, weaving natural-based solutions (NbS) to increase long-term resilience to climate change and other environmental impacts. Increasing green space and tree planting in built up areas can help with cooling and flood abatement while mitigating air pollution, improving carbon sequestration and providing health and wellbeing benefits to workers.
- **Fire resistant buildings** designed to withstand the spread and impact of fires, providing a safe, secure, and resilient environment for occupants. Türkiye is among the countries with highest risk of forest fires exacerbated by climate change. The applications used for workshops will go over and above the legally required standards.

<sup>46</sup> Türkiye CCDR: <https://openknowledge.worldbank.org/server/api/core/bitstreams/ffa637a2-d07c-40b1-9992-cc350a46fe6a/content>



The planned measures are creating fire defense spaces, using fire-resistant building materials (e.g. facade paintings), implementing fire doors and sprinklers and preventive community planning including a fully equipped fire department and regular trainings. Those measures will help to prevent the spread of fire from/to the surrounding environment and mitigate the risks caused by fires.

- **Water-efficiency technologies** such as rainwater harvesting, wastewater treatment, and low flow fixtures incorporated in the design of buildings and infrastructure will reduce water consumption and optimize water usage and circularity.

**Table A4.4: Cost Breakdown of climate adaptation measures for workshops and common infrastructure**

Cost Element	Climate-related risk	Estimated Cost (US\$)	% of total project cost
Rock Wool Insulation	Heat stress; fire; flood risk	52,315,367	8.88
Heat controlled windows	Heat stress	6,310,204	1.07
Waterproof foundations	Flood risk; water scarcity	21,483,418	3.65
Low-flow tap fittings and motion sensors	Water scarcity	1,152,752	0.20
WWTP	Water scarcity	1,920,000	0.33
Rainwater Harvesting	Flood risk; water scarcity	1,582,500	0.27
Permeable pavements	Flood risk	5,065,447	0.86
Adaptive landscaping	Heat Stress	14,321,703	2.43
Fire risk building adaptations	Fire Risk	5,393,337	0.92
<b>Total (avoiding double counting)</b>		<b>46,263,905</b>	<b>7.86</b>



### ANNEX 5: SIE Sites Selection and Potential Demand for Workshops

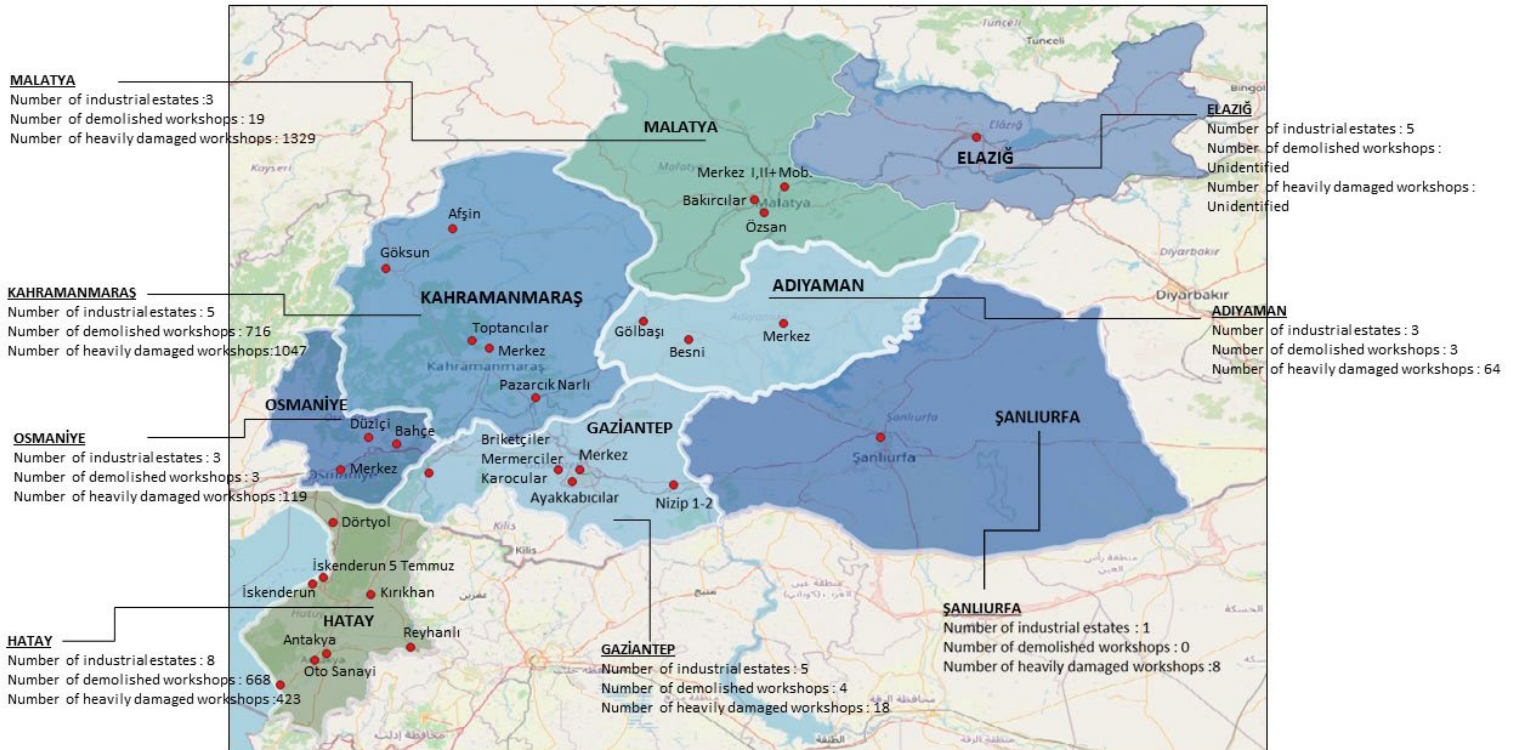
1. This Annex provides details on how MoIT selected sites for building new SIEs, assessed the potential demand for workshops and made preliminary allocations of workshops to be constructed in new SIEs. It also provides information on the lottery process which will be utilized to assign workshops to eligible MSMEs owners. As MoIT’s assessment of potential demand for workshops and the proportion to be built in each SIE during the first phase are preliminary, MoIT has agreed to verify the actual demand for workshops as the project nears the start of construction. This verification will be done by asking the pool of interested MSMEs to submit an ‘Expression of Interest’ via an online form.

#### Selection of locations for building new SIEs

2. The epicenters of the February 2023 earthquakes were in the provinces of Kahramanmaraş and Hatay. The neighboring provinces of Adana, Adıyaman, Diyarbakır, Elazığ, Gaziantep, Kilis, Malatya, Osmaniye, and Şanlıurfa also suffered significant damages. In total, 11 provinces were affected by the earthquakes.

3. Since July 2023, the Presidency issued 32 Decrees that designated 32 new industrial sites in the 11 earthquake-affected provinces. Out of the 32 new sites, 1 was designated as an industrial park, 4 for OIZs, and the remaining 27 were deemed suitable for the establishment of new SIEs. Map A1 below illustrates the locations of the 27 proposed new SIEs.

Map 1: 27 proposed new SIEs, by province



Source: MoIT.



4. **Among the industrial areas designated by law, MoIT has selected 7 new SIEs in 4 provinces as suitable for the Project and proposed these to the Bank for financing under the project.** The criteria used for the selection relate to a site’s potential for attracting investments, its proximity to urban centers, and the suitability of the terrain for construction. The specific criteria applied for site selection and their inclusion in the project include:

- be located within one of the Earthquake-affected Provinces, and where industrial workshops and industrial estates have sustained significant damage;
- not be on, and be reasonably distant from, earthquake fault lines;
- be in an area with low risk of flooding;
- be on publicly owned land not requiring expropriation;
- be in an area that is, or can be, zoned for industrial use;
- be topographically suitable for industrial use;
- be located within the proximity of, and with connectivity to, urban areas; and
- be in an area with economic development needs.

**MoIT’s assessment of potential demand for workshops and preliminary allocation to new SIEs**

5. **To determine MSMEs’ likely demand for new workshops, early in 2024 MoIT conducted a series of interviews with MSMEs and meetings with business associations in the 4 provinces where the 7 selected new SIEs are located.** Organizations representing MSMEs, such as chambers of industry and commerce and local industry association, and MoIT staff and consultants discussed the need for industrial premises in any specific site, as well as desirable workshop features, such as location, size, materials used, building techniques, timelines, and potential cost. It preliminarily estimated the potential demand at around 8,500 new workshops. Table 1 below summarizes the new SIEs identified, their respective provinces, the potential demand for workshops in each, and the preliminary allocation of workshops per site.

**Table A5.1: Allocation of workshop within the new SIEs**

No	Province	SIE	Area Size (ha)	Potential Demand <sup>47</sup>	MoIT’s preliminary allocations	Ratio	Total Building Area (sqm)
1	Elazığ	Çamyatağı	107.8	2,842	200	7%	35,000
2	Hatay	İskenderun Bitişik	40.2	56	56	100%	33,000
3	Kahramanmaraş	Alibeyuşağı	108.0	2,483	544	22%	255,200
4	Kahramanmaraş	Halkaçayırı	146.0				
5	Kahramanmaraş	Urumoğlu	47.5				
6	Malatya	Battalgazi Eski Malatya	2.6	84	70	83%	7,000
7	Malatya	Yeşilyurt (2nd stage)	229.7	3,052	730	24%	136,500
<b>TOTAL</b>			<b>681.8</b>	<b>8,517</b>	<b>1,600</b>	<b>19%</b>	<b>466,700</b>

Source: MoIT, April 2024

6. **Owing to the necessity to construct in stages to stay within the budget provided by this Project, MoIT and the Bank have preliminarily identified 1,600 workshops to be built in the first phase.** MoIT considered a combination of criteria, which included the level of damage in the province and in existing Industrial Estates (primary criteria);

<sup>47</sup> Based on preliminary expressions of interest



specific regulations affecting the land (SIE site availability); suitability of land for construction at this time; existing government-funded programs (see table 2); and a requirement for a minimum package of 50 workshops.

**woman Allocation of workshops for each province**

No	Province	SIE Name	Number of workshops	On going / Completed in 5 years	Project Cost (USD)
1	Adana	Adana-Doğu (Yüreğir) KSS (Iı.Etap)	106	Completed (2023)	11,810,000
2	Adana	Adana Doğu (3.Etap)	21	Preparation Tech. Design	24,570,000
3	Adana	Adana Tekstilcent KSS	119	Preparation Tech. Design	90,900,000
4	Diyarbakır	Diyarbakır Yeni Ergani KSS (Gap)	551	Preparation Tech. Design	45,450,000
5	Gaziantep	Gaziantep Mobilyacılar KSS (Gap)	92	Preparation Tech. Design	29,810,000
6	Gaziantep	Gaziantep Oğuzeli Mobilya Ve Ahşap Ürünleri İmalatçıları İhtisas KSS (GAP)	75	Preparation Tech. Design	60,600,000
	Gaziantep	Islahiye KSS	80	Construction in progress	3,000,000
7	Gaziantep	Gaziantep Tır Ve Makina KSS (GAP)	459	Construction in progress	100,000,000
8	Hatay	Hatay (Belen) KSS	104	Construction in progress	95,450,000
9	Hatay	Hatay Shoe Manufacturers KSS	183	Construction in progress	102,570,000
10	Hatay	Hatay Erzin KSS	71	Construction in progress	10,600,000
11	Hatay	Hatay Şenköy KSS	45	Preparation Tech. Design	60,600,000
12	Hatay	Hatay-Antakya Furniture KSS	100	Completed (2019)	48,990,000
13	Hatay	Hatay-Reyhanlı KSS	231	Completed (2020)	10,060,000
14	Hatay	Antakya Merkez KSS. I. On Site Phase Reconstruction	194	Construction in progress	27,000,000
15	Kahramanmaraş	Kahramanmaraş Furniture KSS	115	Construction in progress	85,300,000
16	Kahramanmaraş	Kahramanmaraş Merkez KSS (Iv.Bölüm)	356	Construction in progress	87,240,000
17	Kahramanmaraş	Kahramanmaraş Türkoğlu KSS	136	Construction in progress	13,270,000
	Kahramanmaraş	Pazarcık KSS	142	Construction in progress	10,500,000
18	Kahramanmaraş	Jewelry KSS	325	Completed (2019)	24,480,000
19	Kahramanmaraş	Kahramanmaraş KSS 1. Phase On Site Reconstruction	182	Construction in progress	15,000,000
20	Kilis	Kilis-Merkez (Yeni) Iıı. Kısım KSS	28	Completed (2019)	760,000
21	Osmaniye	Osmaniye Toprakkale KSS	242	Construction in progress	22,720,000
22	Şanlıurfa	Şanlıurfa-Ayakkabıcılar KSS	46	Completed (2021)	3,930,000
23	Malatya	Yeşilyurt 1. Phase	714	Construction in progress	14,875,000
<b>Toplam</b>			<b>4717</b>		<b>999,485,000</b>

No	Province	Industrial Estates	Number of workshops	Ongoing / To be completed in 5 years	Project Cost (USD)
1	Adana	Adana-Doğu (Yüreğir) (1st stage)	106	Completed (2023)	11,810,000
2	Adana	Adana Doğu (3rd stage)	21	Preparation Tech. Design	24,570,000
3	Adana	Adana Tekstilcent	119	Preparation Tech. Design	90,900,000
4	Diyarbakır	Diyarbakır Yeni Ergani (Gap)	551	Preparation Tech. Design	45,450,000
5	Gaziantep	Gaziantep Mobilyacılar (Gap)	92	Preparation Tech. Design	29,810,000
6	Gaziantep	Gaziantep Oğuzeli Mobilya Ve Ahşap Ürünleri İmalatçıları İhtisas (GAP)	75	Preparation Tech. Design	60,600,000
	Gaziantep	Islahiye	80	Construction in progress	3,000,000
7	Gaziantep	Gaziantep Tır Ve Makina (GAP)	459	Construction in progress	100,000,000
8	Hatay	Hatay (Belen)	104	Construction in progress	95,450,000
9	Hatay	Hatay Shoe Manufacturers	183	Construction in progress	102,570,000
10	Hatay	Hatay Erzin	71	Construction in progress	10,600,000
11	Hatay	Hatay Şenköy	45	Preparation Tech. Design	60,600,000
12	Hatay	Hatay-Antakya Furniture	100	Completed (2019)	48,990,000
13	Hatay	Hatay-Reyhanlı	231	Completed (2020)	10,060,000



No	Province	Industrial Estates	Number of workshops	Ongoing / To be completed in 5 years	Project Cost (USD)
14	Hatay	Antakya Merkez (I. On Site Phase Reconstruction)	194	Construction in progress	27,000,000
15	Kahramanmaraş	Kahramanmaraş Furniture	115	Construction in progress	85,300,000
16	Kahramanmaraş	Kahramanmaraş Merkez (4th section)	356	Construction in progress	87,240,000
17	Kahramanmaraş	Kahramanmaraş Türkoğlu	136	Construction in progress	13,270,000
18	Kahramanmaraş	Pazarcık	142	Construction in progress	10,500,000
19	Kahramanmaraş	Jewelry	325	Completed (2019)	24,480,000
20	Kahramanmaraş	Kahramanmaraş (1st Phase On Site Reconstruction)	182	Construction in progress	15,000,000
21	Kilis	Kilis-Merkez (Yeni) III. Kısım	28	Completed (2019)	760,000
22	Osmaniye	Osmaniye Toprakkale	242	Construction in progress	22,720,000
23	Şanlıurfa	Şanlıurfa-Ayakkabıcılar	46	Completed (2021)	3,930,000
24	Malatya	Yeşilyurt (1st stage)	714	Construction in progress	14,875,000
<b>Total</b>			<b>4,717</b>		<b>999,485,000</b>

Source: MoIT, May 2024.

#### MoIT rationale for allocation of workshops for each of the provinces is as follows:

- **Province of Kahramanmaraş.** In the three new SIEs identified for this province, MoIT plans to build 544 workshops, or 22 percent of the initial estimation of about 2,500 workshops needed. One third of the demand identified in the initial assessment will be met by ongoing government-funded programs, including 749 workshops built across 4 Industrial Estates. Taken together, World Bank-funded construction and ongoing government-supported construction will meet around 52 percent (1,293) of estimated needs.
- **Province of Malatya.** In the two new SIEs identified for this province, MoIT plans to build 800 workshops, or over 25% of the initial assessment of around 3,100 workshops needed. In Malatya's larger SIE (Yeşilyurt), the first construction phase has already started using government funding. World-Bank-funded construction and ongoing government supported construction will meet around 40 percent (1,514) of the total estimated need.
- **Province of Hatay.** In the İskenderun Bitişik SIE, MoIT plans to build 56 workshops, representing 100 percent of the initial assessment of workshops needed in the immediate vicinity of the proposed site. Although Hatay was the province hardest hit by the earthquakes, there are two key factors that have determined the relatively small number of workshops planned for inclusion in the project. The first is the lack of designated sites (via presidential decrees) as a result of regulatory factors, such as zoning and land use (the majority of land is designated for agriculture and forestry) and spatial limitations (e.g., proximity to earthquake epicenter, location on the delta of the river, the mountainous terrain, and the location of infrastructure). The second is the provision of workshops via ongoing and recently completed government-funded construction programmes, which will deliver 1,334 new workshops, and which will meet some of the needs resulting from the extensive earthquake damage. Due to these constraints, MoIT's demand assessment was limited to the area proximate to the only site available for development, and is, therefore, not representative of the overall





need for workshops in the province. MoIT also considered the requirement of a minimum package of 50 workshops for the construction project to be economically viable.

- Province of Elazığ. In the Çamyatağı SIE, MoIT plans to build 200 workshops, or 7 percent of the initial assessment of about 2,800 workshops needed. According to official data, Elazığ is one of the less affected provinces, and there has not been any significant damage to existing Industrial Estates. However, workshops located underneath destroyed residential or commercial buildings experienced severe damage. The MoEUCC estimated that approximately 5,000 buildings had been destroyed or heavily damaged. The preliminary assessment of need is unconfirmed, which prompted MoIT to take a cautious and phased approach, hence the lower initial allocation of workshops in the selected site.

### **Lottery process to assign new workshops**

7. **Once the workshops are completed and ready to be delivered, MoIT will first verify that the applications received meet the eligibility criteria.** A lottery will determine the allocation and matching of workshops to beneficiaries. This lottery will be conducted in several rounds until all workshops are assigned. After the first round of lottery draws, MoIT will offer the winning beneficiaries the opportunity to purchase the workshop. A second round of lottery draws will then assign those workshops not allocated because the initial winner declined the offer. This process will continue until all workshops are assigned.

8. **MoIT will establish an online portal to facilitate the lottery, which will also include a link to collect expressions of interest before construction starts.** The lottery will be broadcast live on the portal, allowing applicants to access all information regarding their applications using their TR identity number. The lottery will be organized at the SIE level. The process will be benchmarked against other types of lotteries to ensure a fair and transparent outcome for all MSME applicants.