



Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 25-Sep-2023 | Report No: PID194



BASIC INFORMATION

A. Basic Project Data

Project Beneficiary(ies) Turkiye	Operation ID P500777	Operation Name Türkiye Second Energy Efficiency in Public Buildings	
Region EUROPE AND CENTRAL ASIA	Estimated Appraisal Date 12-Dec-2023	Estimated Approval Date 28-Mar-2024	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing (IPF)	Borrower(s) Republic of Turkiye	Implementing Agency Ministry of Environment, Urbanization and Climate Change	

Proposed Development Objective(s)

The project development objectives are to cost-effectively reduce energy use in central government buildings and to develop and pilot a sustainable financing mechanism for energy efficiency investments in central government buildings.

PROJECT FINANCING DATA (US\$, Millions)

Maximizing Finance for Development

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

SUMMARY

Total Operation Cost	310.00
Total Financing	310.00
of which IBRD/IDA	300.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	300.00
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Non-World Bank Group Financing

Counterpart Funding	10.00
National Government	10.00

Environmental and Social Risk Classification

Moderate

Concept Review Decision

The review did authorize the preparation to continue

B. Introduction and Context

Country Context

1. **Türkiye is the 19th largest economy in the world, with a GDP of roughly \$906 billion. It is a member of the OECD and the G20, and an increasingly important donor of Official Development Assistance.** It enjoyed high economic growth rates between 2002-2017 that supported poverty reduction but shocks that began in late 2017 and early 2018 continue to cause risk to the economic gains made since early the 2000s. Türkiye achieved rapid economic and social development in the 2000s, with poverty incidence more than halving and real Gross Domestic Product (GDP) increasing by 50 percent by 2008. Since the Global Financial Crisis, rapid growth continued but was increasingly associated with stagnant productivity, a rising current account deficit, and growing foreign exchange-denominated debt stock. Türkiye experienced economic overheating in 2017, double-digit inflation, and a large current account deficit. The cumulative effects of these and other economic vulnerabilities came to a head in mid-2018, with the tightening of global economic conditions. These events triggered a significant depreciation of the Turkish lira and turmoil in the Turkish economy. Spending fell, inflation accelerated, and the corporate sector’s debt increased. Türkiye experienced three-quarters of negative growth from late 2018 to mid-2019, coupled with sizable job losses. Poverty reduction progress stalled in 2018.

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

3. **Türkiye’s economic growth slowed in 2022 amidst a deteriorating domestic macroeconomic and changing external environment.** Türkiye’s economic growth remained among the best G20 growth performers in 2022 despite growth slowing to 5.6 percent as exports, investment and manufacturing activity lost momentum in the second half of the year. Russia’s invasion of Ukraine slowed Türkiye’s exports to the European Union (EU) and raised energy import prices.



However, exports to Russia slightly increased, and Türkiye experienced increased financial inflows from unknown origins recorded as net error and omissions. The country's vulnerability has been exacerbated by the two devastating earthquakes that struck the southern provinces of Türkiye on February 6, 2023.

4. **The February 2023 earthquakes have resulted in the largest such disaster to hit the country in over 80 years and have inflicted the heaviest damage in 11 provinces in southern Türkiye.** These regions have some of the highest poverty rates in Türkiye and also host more than 1.7 million Syrian refugees, which is almost 50 percent of the total Syrian refugee population in Türkiye. The earthquakes caused an estimated \$34.2 billion in direct physical damages, the equivalent of 4 percent of the country's 2021 GDP. Direct damages to residential buildings account for 53 percent (US\$18 billion) of the total damage, with 28 percent of damage (US\$9.7 billion) in non-residential buildings (e.g., health facilities, schools, government buildings, and private sector buildings), and 19 percent of damage (US\$6.4 billion) related to infrastructure (e.g., roads, power, water supply).

5. **Türkiye is highly vulnerable to climate change and committed to addressing the climate emergency, as shown by Türkiye's ratification of the Paris Agreement in October 2021 and its pledge to achieve net zero emissions by 2053.** Türkiye has a "high vulnerability" in 9 out of 10 climate vulnerability dimensions, compared with a median of 2 out of 10 in other OECD countries.¹ Climate-related disasters have been striking with greater frequency and intensity over the last two decades. In 2019 alone, 935 extreme events occurred, caused mainly by heavy rains and floods, windstorms, snow, and hail. Climate models predict this trend to continue with increasing abnormalities in precipitation patterns with more frequent extreme rain and floodings, as well as protracted drought and wildfires, and sea-level rise. These impacts will likely be felt through higher food prices and reduced agricultural productivity that will disproportionately impact poor and vulnerable groups. Increased incidence of wildfires and decreased rainfall for hydropower may further contribute to greenhouse gas (GHG) emissions in the future. Recognizing the importance of addressing the climate emergency, Türkiye ratified the Paris Agreement in October 2021 and submitted the first iteration of its Nationally Determined Contribution² (NDC) to the United National Framework Convention on Climate Change (UNFCCC) in April 2023. Türkiye is also in the process of developing its Long-term strategy (LTS) to set out goals to achieve net zero emissions by their target of 2053.

Sectoral and Institutional Context

6. **Energy efficiency is critical for Türkiye to sustain economic growth and improve energy security while meeting its climate commitments.** In 2021, Türkiye's energy intensity (2.49 MJ of primary energy use per \$2017 PPP GDP) was slightly lower than that of EU countries (2.94), but Türkiye's energy consumption has significantly increased in recent decades and is expected to grow further (Türkiye's energy use per capita is only about half that of EU countries).³ Reducing energy intensity is also critical to strengthen its competitiveness and energy security – Türkiye's energy imports have increased in recent years, from 3,189 PJ in 2010 to 4,798 PJ in 2021 (74 percent of the total energy demand).⁴ In 2022, the country imported \$US96.6 billion worth amount of oil and gas, which is 26 percent of its total imports and 10 percent of its GDP.⁵ As of 2021, about 84 percent of Türkiye's primary energy supply was based on fossil fuels (31.0 percent natural gas, 27.4 percent oil, and 25.3 percent coal), with almost all the gas and oil, and more than half of the coal, being imported.^{6,7} The Government has recognized the importance of energy efficiency (EE) as evidenced by its inclusion in various policy documents, e.g., Türkiye's NDC, Energy Efficiency Law (2007), various by-laws and decrees including the By-law on Energy Performance of Buildings (2008), By-law on Green Certificate for Building and Settlement (2022), By-law on

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

² https://unfccc.int/sites/default/files/NDC/2023-04/T%C3%9CRK%C4%B0YE_UPDATED%201st%20NDC_EN.pdf

³ World Bank Open Data, <https://data.worldbank.org/indicator/EG.EGY.PRIM.PP.KD?locations=TR-EU>

⁴ Republic of Türkiye, Ministry of Foreign Affairs, <https://www.mfa.gov.tr/turkeys-energy-strategy.en.mfa>

⁵ TURKSTAT, <https://data.tuik.gov.tr/>

⁶ IEA World Energy Balances 2022, Türkiye, <https://www.iea.org/countries/turkiye>

⁷ IEA (2021) Turkey 2021 Energy Policy Review, <https://www.iea.org/reports/turkey-2021>



Eco-Design of Energy-Related Products (2022), and Presidential Decree on Energy Performance Contracts or EPCs (2021), Türkiye National Energy Plan (2022-2035), 11th National Development Plan (2019-2023), National Climate Change Strategy (2010-2023), National Climate Change Action Plan (2011-2023), and Energy Efficiency Strategy Paper and National Energy Efficiency Action Plan (NEEAP, 2017-2023). The Government is currently reviewing and updating legislation related to EPCs and developing its second NEEAP (2024-30), which is expected to show greater levels of ambition and investments.

7. **The building sector is one of the largest energy-consuming and greenhouse gas-emitting sectors in Türkiye and is an indispensable component to meet energy efficiency and climate goals.** The building sector, including residential, commercial, and public services, consumed 1.55 million TJ in 2020, about one-third of the country's total final energy consumption (and more than the industry sector). In addition, the building sector is a direct consumer of coal and natural gas to meet its heat demand. Almost 41 percent of Türkiye's final coal consumption (32 percent for commercial and public services and 9 percent for residential) and 61 percent of final gas consumption (13 percent for commercial and public services and 48 percent for residential) were used in buildings in 2020. As a result, this sector emitted about 62 Mt of CO₂ in 2020, about one-quarter of the direct GHG emissions from the final consumption sector (i.e., without accounting emissions associated with electricity) of the country⁸. Given Türkiye's building floor area is projected to almost double from 3.6 billion m² in 2020 to 7.2 billion m² by 2050⁹, with increasing demands for cooling, the building sector will continue to drive the country's energy consumption. Türkiye's policy documents, including NDC, highlight the building sector as an indispensable component to meet the country's EE and climate mitigation goals.

8. **The Government is leading by example through implementing energy efficiency improvements in public buildings.** Global experience has shown that EE improvements in the public buildings sector can help stimulate market development and lead by example. Türkiye has followed this approach and the Ministry of Energy and Natural Resources (MENR), with the support of the World Bank, is currently preparing a national program plan for EE renovations of all public buildings in the country. Based on the latest estimates for the national program plan, there are over 530,000 public buildings¹⁰ (places of worship, government offices, schools, hospitals, universities, and dormitories, etc.) that consume more than 51.9 TWh of final energy per year (or 187,000 TJ, 12 percent of the energy use for the entire building sector, or 4 percent of the country's final energy consumption). EE renovations of this building stock could result in energy savings of about 36 percent or 18.5 TWh per year and would require investments of more than US\$8.8 billion (excluding the investment needed for any structural reinforcements).¹¹ Consistent with the national program plan, the World Bank is supporting investments in public facilities through three projects that are implemented by the Ministry of Environment, Urbanization and Climate Change (MoEUCC) and Ilbank, the (i) Energy Efficiency in Public Buildings Project (EEP, P162762), which supports EE and distributed RE measures in public buildings that are seismically safe, the (ii) Seismic Resilience and Energy Efficiency in Public Buildings Project (SREEP, P175894), which supports EE and distributed renewable energy (RE) measures in central government buildings that require structural measures for seismic safety, and the (iii) Public and Municipal Renewable Energy Project (PUMREP, P179867), which supports distributed RE in central government buildings that are already sufficiently energy-efficient and seismically safe as well as in municipalities. These projects are helping to address several barriers that prevent EE and distributed RE investments in public buildings despite the attractive payback periods, e.g., creating awareness and credible data on actual investment costs and energy savings; building capacity of institutions that manage and implement investments on behalf of the line ministries and municipal governments, which typically do not have the capacity to review energy audits, select viable EE and RE measures, assess

⁸ IEA World Energy Balances 2022, Türkiye, <https://www.iea.org/countries/turkiye>

⁹ According to the World Bank's Türkiye Country Climate and Development Report (2022), Turkey's building floor area is projected to grow from 3.6 billion m² in 2020 to 7.2 billion m² in 2050 (an annual average growth rate of 2.3%) and the number of buildings is projected to grow from 9.9 million buildings in 2020 to 17 million by 2050 (an annual average growth rate of about 1.8%).

¹⁰ MoEUCC's KAYES database includes about 530,000 registered public buildings (excluding security and military facilities), corresponding to a gross floor area of 410.5 million m².

¹¹ MENR (2023) National Program Plan for Energy Efficiency in Public Buildings.



the quality of designs, mobilize financing and implement and monitor investments; improving the capacity of service providers to undertake energy audits and develop designs; reducing transaction costs through aggregation of individual public building projects; building an inventory of case studies; and providing financing to central government facilities and municipalities to cover upfront cost of the investments.

9. **There is an urgent need to scale-up energy efficiency investments in public buildings and develop sustainable financing mechanisms.** While the Government's efforts and the Bank-supported projects are delivering significant energy savings in public buildings, there is a need to scale-up these efforts. First, the crisis triggered by COVID-19, a war in Ukraine, high domestic inflation, and a devaluating currency had direct impacts on energy costs and construction supply chains, the latter of which led to a significant rise in renovation costs and thus the financing needs for the EE investments in the public sector. Second, updates in Turkish legislation, such as the establishment of a national definition for nearly-zero energy buildings (NZEBS) in February 2022 or the legislative package issued in May 2019 for distributed RE, and uptake of previously less established technologies in Türkiye, such as heat pumps, allow for more comprehensive investments with higher energy savings and GHG emission reductions. Third, more sustainable financing mechanisms are needed to maintain and scale up the investments to renovate the entire public building stock in the coming decades. MENR's proposed national program plan envisions several institutions in parallel, including MoEUCC, to implement EE renovations of public buildings, but currently, no mechanism is in place for MoEUCC to capture energy budget savings and reinvest in further EE renovations. Optimizing the use of scarce public resources remains critical to renovating public buildings. Eventually, the goal will be to crowd in commercial financing from local banks and private investment through energy service companies (ESCOs).

10. **The proposed Project responds to the need for scaled-up energy efficiency investments and builds on the ongoing Energy Efficiency in Public Buildings Project.** The ongoing EEPB (P162762) - financed by a EUR 135.9 million IBRD loan, US\$46.2 million Clean Technology Fund (CTF) loan, and US\$3.8 million CTF grant - was approved in November 2019 and has been progressing well despite a slower start due to delays in the procurement processes and preparation of energy audits, the COVID-19 pandemic, supply chain bottlenecks, and insufficient or very high bids on some tenders. Implementation has been accelerated through growing experience with energy audits and procurement processes, reduced supply chain bottlenecks, and adjustments based on lessons that have emerged during implementation. As of September 2023, the EEPB has renovated 36 buildings, more than 300 additional buildings are expected to be renovated by the end of 2024¹², and most of the EEPB's funds are committed or under procurement. The total number of buildings that can be renovated under EEPB is about half the number anticipated at the time of approval due to: (i) more buildings undergoing deep renovations which has led to higher costs but also higher savings, and (ii) the macroeconomic situation that led to substantial increases in construction costs, for which the Government requested additional financing (AF) to cover these costs. Since the EEPB was prepared under the Bank's old safeguard policies, this new Project is proposed to accommodate this AF request. The proposed Project would provide financing for further EE renovations of central government buildings, develop a revolving financing scheme to capture and reinvest budgetary savings from the EE renovations, include innovative approaches and incorporate lessons from the ongoing EEPB. Some of the main lessons include: (i) higher energy savings than anticipated are possible through encouraging deeper renovations, (ii) there is high potential for solar PV in combination with EE renovations, including rooftop and car park canopy PV, (iii) selection criteria related to the seismic safety of buildings should be further strengthened based on the earthquake in 2023, (iv) the ESCO industry needs further development with support from MENR, as the ESCO business model has struggled in the public and building sector, and (v) high transaction cost associated with the building renovations require significant staff capacity in the Project Implementation Unit (PIU).

Relationship to CPF

¹² 155 buildings are under renovation and 181 buildings are under procurement or in the final design.



11. **The proposed Project will contribute to the Türkiye Country Partnership Framework (CPF, 11096-TR) for the FY18-23 period¹³ by supporting the CPF objective to improve the efficiency of energy consumption.** EE is among the key priorities for the energy sector cooperation between the Bank and the Government of Türkiye as articulated under the CPF Focus Area 3 - Sustainability. Through the Project, the Bank will contribute to reducing energy consumption by supporting and scaling-up investments in EE in public buildings. More specifically, the Project will serve under Objective 7 of the CPF, which aims to help Türkiye enhance its energy independence; Objective 8, which supports sustainable and resilient cities; and, Objective 9, which aims to improve the sustainability of Türkiye's infrastructure assets. It is expected that the Project will also be fully aligned with the next CPF for the FY24-28 period, which builds on Türkiye's Country Climate and Development Report (CCDR)¹⁴ and the upcoming new Systematic Country Diagnostics, and will continue to support Türkiye in achieving its climate neutrality and sustainable development objectives.

12. **The Project is consistent with the Türkiye's Nationally Determined Contribution, the Türkiye Country Climate and Development Report, and the Memorandum of Understanding signed between the World Bank, development partners, and Türkiye.** As per Türkiye's NDC submitted to the UNFCCC in April 2023, the country commits to reducing 41 percent of GHG emissions by 2030 compared to the business-as-usual scenario and to reaching peak emissions by 2038. Türkiye's mitigation policies target GHG emission reduction from energy, industry, transportation agriculture, building, and waste sectors as well as land use, land-use change, and forestry. As highlighted in both energy and building sector mitigation policies, utilizing EE and RE potential at the highest level possible, especially in buildings, is among the key mitigation measures in the NDC. On adaptation, the urban sector is one of the key areas identified in the NDC to improve its adaptation capacity against climate change, particularly with an aim to create sustainable, energy-efficient, and climate-resilient cities. The Türkiye CCDR highlights the need for an immediate start of EE renovations of buildings to meet Türkiye's 2053 net zero target, given the Türkiye's large building stock of 9.9 million buildings in 2020, which is expected to grow to 17 million buildings by 2050. The Project is a building block of Türkiye's national program to renovate all public buildings and will help inform a broader building renovation plan for the country. Finally, the proposed Project is also aligned with the climate Memorandum of Understanding signed between the World Bank, development partners, and Türkiye¹⁵ in November 2021 where the World Bank has committed to providing additional lending worth USD 2 billion between FY22-24 in support of Türkiye's sustainable development and climate action goals.

C. Proposed Development Objective(s)

The project development objectives are to cost-effectively reduce energy use in central government buildings and to develop and pilot a sustainable financing mechanism for energy efficiency investments in central government buildings.

Key Results (From PCN)

13. Progress made under the Project would be monitored through the following two PDO indicators:
- (i) Projected energy or fuel savings (MJ) [Corporate result Indicator (CRI)]
 - (ii) Development and operationalization of a pay-from-savings scheme (Yes/No)

¹³ The Country Partnership Framework (CPF) was initially designed to cover the FY18–21 period but was extended to include FY22–23 through the Performance and Learning Review (PLR) (Report No. 142353-TR), as discussed at the WBG's Board of Directors on March 13, 2020. The PLR confirmed that the CPF's pillars of growth, inclusion, and sustainability remain valid and that most of the objectives set out under these pillars also remain relevant, although some amendments were incorporated into the program to reflect the changes in country circumstances, client demand, and the program's evolution.

¹⁴ <https://www.ifc.org/en/insights-reports/2022/turkiye-country-climate-and-development-report>

¹⁵ Together with other development partners, including International Finance Corporation (IFC), Federal Ministry of the Environment, Natural Conservation and Nuclear Safety of Germany, French Republic, United Nations, and European Bank for Reconstruction and Development.



14. Intermediate indicators could include: (iii) net GHG emissions (metric tons/year) [CRI]; (iv) RE generation capacity (other than hydropower) constructed under the Project (MW) [CRI]; (v) annual energy cost saving (TRY/year); (vi) number of building blocks commissioned; (vii) number of renovated building blocks meeting the Turkish NZEB standard; (viii) number of building blocks renovated under the pay-from-savings scheme; (ix) amount captured and reinvested under the pay-from-savings scheme (US\$); and (x) annual water savings from water efficiency measures (m³/year). These indicators would be subject to revision during the course of Project preparation. Additional indicators on gender, citizen engagement activities, and TA will be also further discussed during preparation and included in the results framework.

D. Concept Description

15. The proposed Project aims to support the Government in reducing the energy consumption in public building sector through investments in EE and distributed RE in central government buildings. The Project would be financed by a US\$300 million IBRD loan and the Bank team is seeking concessional financing from CTF or Global Environment Facility (GEF). The Project would be implemented by MoEUCC and include two components: (i) EE investments in central government buildings and (ii) technical assistance (TA) and Project implementation support. The Project components are described below.

Component 1. Energy efficiency investments in central government buildings (US\$296 million IBRD loan)

16. Under this component, MoEUCC will finance the preparation and implementation of renovations of central government and central-government affiliated buildings (i.e., public buildings under central line ministries) to save energy and increase RE use¹⁶. The Project aims to renovate about 400 buildings. Building renovations would result in minimum energy savings of 30 percent and seek to achieve a Turkish Class B Energy Performance Certificate (EPC) or higher¹⁷. In order to ensure further decarbonization and deeper renovations, the Project will (i) maximize the replacement of fossil fuel-based boilers by electric heat pumps or RE-based heating to the extent that is technically and financially feasible¹⁸; (ii) introduce a standard taxonomy for building renovations that prescribes a set of mandatory EE and on-site RE measures; and (iii) seek to reach the national Turkish NZEB standard for at least 25% of the renovated buildings.

17. For selected buildings, the proposed Project would also pilot the following innovative approaches, which – if successful – could be expanded to a larger number of buildings:

- **Water efficiency:** Improvements in water efficiency, such as upgrades to low-flow fixtures and installation of systems for rainwater capture and use, would be implemented along with the EE and on-site RE measures.
- **Performance-based payments in conventional contracting:** Since experience in the ongoing EEPB has shown that ESCOs in Türkiye have struggled to participate in the public building tenders to date, the proposed Project proposes to pilot introducing a partial performance-based provision under the conventional audit-design or construction contracts.

¹⁶ Investment measures would include upgrades of building envelope (insulation, windows, doors), space and water heating, cooling, ventilation, air conditioning, pumps/fans, lighting, and installation of on-site RE systems that primarily aim to offset the facility's energy consumption. A limited amount of funds could be allocated to ancillary measures (e.g., rewiring, minor structural repairs, painting, seismic safety, fire safety, improving access, etc.) provided that the simple payback period of the overall subproject does not exceed the agreed maximum payback period (proposed as 20 years).

¹⁷ For existing buildings, Energy Efficiency Consultancy Companies (EVDs) authorized by MENR can issue EPCs. In case it is technically or financially not feasible to achieve EPC Class B due to the specific characteristics of an existing building, the MoEUCC PIU may be granted an exception to include the building in the Project on a case-by-case basis provided the renovation results in at least 30 percent energy savings and an EPC Class C.

¹⁸ While full electrification of heating can be achieved through retrofits, experience with EE renovations in public buildings in Türkiye has shown that in some buildings, the technically and financially feasible approach is to replace a part of the existing gas boiler capacity in a building by heat pumps and keep some of the existing gas boiler capacity to support the heat pumps to meet peak demand during the coldest days. In some of these cases, the Project may also finance efficiency improvements of the remaining existing gas boilers.



- **Pay-from-savings scheme:** The proposed Project would also seek to develop and test a pay-from-savings scheme using a budget capture model, which will be developed under Component 2 of the Project. In this model, MoEUCC would continue to arrange for preparation, financing, and implementation of the EE investments in the central government buildings. However, the energy cost savings of the beneficiary would be calculated by MoEUCC, captured by the Ministry of Treasury and Finance (MoTF) from future energy budget allocations to the beneficiary, and flow back to MoEUCC, so MoEUCC can reinvest in additional public buildings. This would allow MoEUCC to maintain a public building renovation program over a longer term, beyond the Project period. This is consistent with MENR’s proposal for a national program for EE in public buildings.

18. It is expected that these investments will demonstrate technical approaches and help further build industry capacity for deeper EE renovations, which would form the basis for the national-level program for EE renovations of public buildings that is currently being developed by MENR (under EEPB). The pilots can also help inform future investments and phases of MoEUCC’s renovation programs.

19. **Eligibility criteria and subproject pipeline.** Beneficiary and subproject eligibility criteria will be elaborated in the PAD but are expected to be consistent with the ongoing EEPB, subject to minor adjustments based on lessons learned from implementation. To identify and prioritize eligible subprojects, the MoEUCC PIU uses the project-specific KADEV database, which covers 2,566 public buildings (30.9 million m² gross floor area). MoEUCC has identified an initial subproject pipeline of almost 200 eligible buildings (hospitals, offices, university buildings, high schools, and dormitories for an investment amount of more than US\$120 million) for which energy audits and designs are currently being prepared under EEPB, so implementation of the renovation works can be initiated as soon as the proposed Project is effective. Buildings would be prioritized for subprojects if they have (i) high specific annual energy consumption, and (ii) use carbon-intensive fossil fuels for heating while ensuring broad geographic coverage and adequate representation of all building types (hospitals, universities, offices, and high schools).

Component 2. Technical Assistance and Project Implementation Support (US\$4 million IBRD loan)

20. This component will include subproject development costs such as marketing and outreach, screening of subproject candidates, and review of energy audits and technical designs; technical support to develop and assess approaches for deeper renovations, comprehensive electrification of buildings, and improvements in water efficiency; day-to-day project management such as preparation and management of procurements, contract management, and supervision of renovation works; implementing financing requirements in compliance with Bank’s fiduciary policies and guidelines; ensuring satisfactory implementation of the Bank’s Environmental and Social Framework (ESF); energy and water savings monitoring; Project monitoring and evaluation; training, capacity building, and knowledge sharing for the PIU staff, service providers such as energy auditors and designers, construction firms, building administrators, women in the EE field, and any other relevant project stakeholders; Project communications and dissemination of results; and incremental operational costs. A modest budget to support seismic assessments of potentially eligible buildings could also be considered if additional eligible buildings need to be identified. This component will also include TA which may include (i) development of a pay-from-savings scheme using a budget capture model as described above, (ii) an assessment of costs and EE measures for new and renovated buildings, which would be used to inform and potentially increase the stringency of future revisions of the Turkish NZEB definition and/or EPC classifications, which applies to all newly constructed buildings with a gross floor area of more than 5,000 m², and (iii) certification of GHG credits for Project activities.

Results chain

Figure 1 presents the proposed Project’s Theory of Change.



Figure 1. Theory of Change.

Long-term outcomes	<ul style="list-style-type: none"> Scaled-up reduction of energy consumption in public buildings through the national program for public building EE renovation, contributing to decarbonizing the building sector and to energy security 	
Medium-term outcomes	<ul style="list-style-type: none"> Reduced energy use and GHG emissions in central government buildings Pay-from-savings scheme piloted for central government buildings Deployment of approaches and practices for deeper renovation and decarbonization in the renovation market Turkish EPC or NZEB definitions strengthened National program plan for public building EE renovation informed 	
Short-term outcomes	<ul style="list-style-type: none"> Increased number of central government buildings with reduced energy and water consumption Contracts with performance-based elements demonstrated and experience disseminated 	<ul style="list-style-type: none"> Improved MoEUCC and industry capacity Pay-from-savings scheme operational under Analysis of EE measures and costs presented to inform revisions of EPC or NZEB definitions
Outputs	<ul style="list-style-type: none"> Central government buildings renovated for EE and on-site RE for self-consumption Pilot buildings equipped with efficient water installations Contracts with performance-based elements piloted 	<ul style="list-style-type: none"> MoEUCC staff and industry stakeholders trained Report on pay-from-savings scheme completed Analysis of EE measures and costs completed
Activities	<ul style="list-style-type: none"> Prepare audits, designs, and implement works for EE and on-site RE measures Pilot measures to increase water efficiency in buildings Test performance-based elements in conventional contracts 	<ul style="list-style-type: none"> Project implementation support, and training and capacity building of MoEUCC staff and industry TA to develop a pay-from-savings scheme and to analyze EE measures and costs
	Component 1	Component 2

Corporate Commitments

21. **Gender.** Türkiye has one of the highest gender gaps in labor force participation among upper-middle-income countries in the Europe and Central Asia region. Only 34.5 percent of women aged 15-64 participated in the labor force in 2020 compared to 73.3 percent of men of the same age.¹⁹ The gender gap in the energy sector labor force is particularly high. According to the Turkish Statistical Institute, in 2020, women made up only 10.9 percent of the workforce in the electricity, gas, steam, water supply and sewerage sectors. While this gap may be partially due to a smaller pool of female professionals in these fields (the female share of graduates from STEM programs in Türkiye in 2014 was 34.7 percent), a recent assessment²⁰ found i) that women students believe that they have fewer opportunities than male peers and acutely feel the lack of role models and ii) that female employees in technical and managerial positions experience gender-based discrimination in the workplace (despite existing legal protections against discrimination in employment). Importantly, most companies do not maintain gender-disaggregated data on their workforce, which limits their ability to perceive and address the inequalities between male and female employees, and the discrimination faced by female employees in terms of recruitment, job retention and career progression. The proposed Project will explore opportunities to reduce the identified gender gap, particularly how to contribute to women’s increased representation in the EE and RE sector. During preparation, activities such as training, skill development activities, increased awareness about inclusive employment opportunities in the sector, and gender balance as a criterion in the procurement processes of consulting services will be explored and relevant indicators to measure their effectiveness will be developed with MoEUCC.

22. **Citizen engagement.** Interventions in public buildings offer opportunities for outreach and engagement with building users. To achieve the objectives of the proposed Project and ensure the sustainability of the results, citizen engagement (CE) will be embedded in the Project design through the following preliminary activities: (i) dissemination of information and participation of building users in subproject preparation and implementation to capture their needs and expectations, and to reflect their feedback in preparation and implementation of the subproject, and (ii) collecting

¹⁹ World Bank Gender Statistics, <https://databank.worldbank.org/source/gender-statistics>

²⁰ Qualitative and Quantitative Gender Gap Assessment in the Geothermal Sector in Türkiye, publication forthcoming.



feedback on the satisfaction about the CE processes. Special attention will be given to a subset of public buildings that may be particularly more important to citizens and subject to use by various members of the community, such as hospitals and universities. CE activities will target relevant stakeholders (primary building users, served communities as well as vulnerable or underrepresented groups). During Project preparation, the specific arrangements for CE and beneficiary feedback indicators (BFI) will be designed considering the lessons learned from the ongoing project EEPB.

23. **Paris Alignment: The proposed Project is likely to be aligned across mitigation and adaptation and resilience.** The proposed operation is consistent with Türkiye’s climate policies, as stated in para 12. As stated in the NDC, Türkiye’s main mitigation policy in the energy and building sector is to utilize EE and RE potential at the highest level possible considering feasibility and market conditions. The EE and RE investments under the proposed Project actively contribute to decarbonization by reducing on-site fossil fuel use (mostly for heating) and grid-based electricity purchases, leading to substantial GHG emissions reductions. The proposed Project was screened for short- and long-term climate and disaster risks using the “Climate and Disaster Risk Screening Tool”. Buildings and locations where EE and distributed RE measures will be installed are still unknown. Thus, the geographic scope considered in this screening was nationwide. Albeit location-specific, the subproject locations may be exposed to the following hazards with ratings “moderate” or “high exposure” in current and future timeframes²¹: (i) extreme temperature, (ii) extreme precipitation and river, urban and coastal flooding, and (iii) geophysical hazards including earthquake, tsunami, volcanic eruption, wildfires, and landslides. The Project design includes mitigation measures to address the potential impact of these climate and disaster risks on the Project’s investment. Thus, there are no risks on the mitigation and adaptation side, and the Project will likely be aligned with the Paris Agreement.

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

Summary of Screening of Environmental and Social Risks and Impacts

24. The environmental and social (E&S) impacts and risks of the Project are rated as Moderate as the potential impacts and risks of the Project are; (i) predictable and expected to be temporary and/or reversible, (ii) low in magnitude; (iii) site-specific, without likelihood of impacts beyond the actual footprint of the Project; and (iv) low probability of serious adverse effects to human health and/or the environment (e.g., do not involve use or disposal of toxic materials, routine safety precautions are expected to be sufficient to prevent accidents, etc.)

25. These impacts will be resulting from civil works under Component 1 including energy efficiency interventions and renovation/improvement activities. Component 2 of the Project is not expected to create any environmental and social impacts and risks. The potential negative environmental risks from civil works can be listed as traffic, dust and noise generation, vehicle and machines emissions, generation of construction waste, handling of hazardous material and waste together with occupational health and safety (OHS) risks as well.

²¹ Based on ThinkHazard! developed by GFDRR <http://thinkhazard.org>



26. The proposed sub-projects will be implemented in the existing public government buildings. Therefore the Project is not expected to create land use impacts and risks; and project activities require land acquisition or lead to economic displacement as referred to in the World Bank’s Environmental and Social Standard (ESS) 5, will be screened out through the E&S screening list. Social risks and impacts are associated with labor and working conditions and community health and safety. Labor influx risks are low since the majority of the workforce will be engaged locally; only a small number will come from other parts of the country, if necessary. Furthermore, activities adversely affecting the known cultural heritage sites and natural and critical habitats as referred to in ESS6 and ESS8, respectively, will not be supported under this project. Some of the government buildings selected for renovation under the Project may be registered as cultural heritage/cultural assets in the property inventory. In such cases, MoEUCC will obtain the relevant permits from related institutions of the Ministry of Culture and Tourism before any civil works begin. In such cases, civil works will be performed under the allocations of the given Permit.

27. To address potential E&S risks and impacts MoEUCC, based on requirements of the national legislation, the WB’s ESSs and other relevant policies, will prepare an Environmental and Social Management Framework (ESMF) including a project-level Environmental and Social Management Plan (ESMP), Labor Management Procedures (LMP) and Stakeholder Engagement Plan (SEP). The site-specific E&S instruments (ESMPs) will be prepared based on the initial E&S assessments once the investments and their location details are finalized. Based on the environmental and social screening of the sub-projects, either the project-level ESMP (part of the ESMF) or the site-specific ESMP will be part of the bidding documents and construction contracts.

28. The Project implementing agency, GDCA has an existing PIU that is implementing the Energy Efficiency in Public Buildings (EEPBP, P162762) and Public and Municipal Renewable Energy Project (P179867). The current E&S staff resources of the PIU which include one environmental, one social, one stakeholder engagement & communications and one occupational health and safety specialist will continue to support the Project as they are already familiar with the Bank procedures and project activities of EEPBP which are almost the same with the new proposed project.

However, the EEPBP is being implemented under the safeguard policies and the PIU has limited experience in implementing a project under ESF, this would hence warrant further capacity-building to strengthen the PIU’s capacity to manage the environmental and social risks as per the ESF. Such capacity building will be realized through project-specific training on ESF and for environmentally and socially responsive sub-project planning and implementation.

29. The PIU will (i) oversee the preparation of site-specific ESMPs (ii) be responsible for the review and the quality of each ESMP, C-LMP, and overall SEP implementation, (iii) monitor the implementation of the ESMPs, (iv) report the status of implementation to the Bank. The Contractors will be responsible for (i) the implementation of the ESMPs and LMPs, (ii) setting up a site-specific GM for the public and the workers. The Contractors will be responsible for the implementation of the ESMPs and LMPs, as well as setting up a site-specific GM for the public and the workers. MoEUCC, with the support of the supervision consultant, will also be responsible for monitoring the implementation of the ESMPs and reporting the status of implementation to the Bank, as agreed in the Environmental and Social Commitment Plan (ESCP).

30. The TA activities will integrate E&S concerns into Terms of References (ToRs), studies and any other analytical products, which will ensure that the planning process includes adequate assessment of E&S implications and that the advice provided is consistent with the ESF.

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