
Developing National Capacity of Turkmenistan through Improving Regulatory Environment towards Energy Efficient and Sustainable Building Sector

Part I: Project Information

GEF ID

10996

Project Type

FSP

Type of Trust Fund

GET

CBIT/NGI

CBIT No

NGI No

Project Title

Developing National Capacity of Turkmenistan through Improving Regulatory Environment towards Energy Efficient and Sustainable Building Sector

Countries

Turkmenistan

Agency(ies)

UNDP

Other Executing Partner(s)

Executing Partner Type

Main Project Executing Entity: Ministry of Agriculture and Environmental Protection - Government
Secondary Project Executing Entity: Ministry of Construction and Architecture

GEF Focal Area

Climate Change

Taxonomy

Focal Areas, Climate Change, United Nations Framework Convention on Climate Change, Nationally Determined Contribution, Climate Change Mitigation, Energy Efficiency, Influencing models, Demonstrate innovative approach, Strengthen institutional capacity and decision-making, Transform policy and regulatory environments, Stakeholders, Civil Society, Academia, Private Sector, SMEs, Type of Engagement, Consultation, Partnership, Participation, Information Dissemination, Gender Equality, Gender Mainstreaming, Sex-disaggregated indicators, Gender results areas, Access to benefits and services, Participation and leadership, Integrated Programs, Sustainable Cities, Buildings, Energy efficiency, Capacity, Knowledge and Research, Capacity Development, Innovation, Knowledge Exchange, Learning, Theory of change, Adaptive management, Indicators to measure change

Sector

Energy Efficiency

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 2

Climate Change Adaptation

Climate Change Adaptation 1

Duration

60 In Months

Agency Fee(\$)

196,302.00

Submission Date

4/12/2022

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CCM-1-3	GET	2,066,333.00	28,446,643.00
	Total Project Cost (\$)	2,066,333.00	28,446,643.00

B. Indicative Project description summary

Project Objective

To support Turkmenistan's low carbon development in achievement of climate mitigation goals by reducing GHG emissions from multi-family residential buildings sector and by improved monitoring of energy use in public buildings.

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 1: Piloting energy efficient technologies and EMIS in residential and public buildings	Investment	Outcome1: Energy efficiency techniques demonstrated through advanced building envelope upgrades to the level of nearly zero-energy residential buildings (NZEB) and Energy Management and Information System (EMIS) installed and tested in residential and public buildings.	Output 1.1 Investment in energy efficiency and energy savings measures in two public multi-family residential buildings of 9,532 sq.m. that are constructed in a new urban settlement (Administrative Centre of Ahal Province), featuring the best available envelope design towards NZEB. (\$720,000). Output 1.2. Investment in the energy management systems (EMIS) and related IT technologies in two pilot residential buildings and one public building with potential for expansion and replication following the end of the Project. (\$71,330).	GET	791,330.00	10,640,000.00

Component 1: Piloting energy efficient technologies and EMIS in residential and public buildings	Technical Assistance	Outcome1: Energy efficiency techniques demonstrated through advanced building envelope upgrades to the level of nearly zero-energy residential buildings (NZEB) and Energy Management and Information System (EMIS) installed and tested in residential and public buildings.	Output 1.3 Design of a 10-year public investment program (valued at \$20 million for years 2026-2035) for new constructions under new building codes, adopted before the end of the Project. (\$100,000).	GET	100,000.00	700,000.00
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<p>Component 2: Policy, regulations and institutional mechanism for energy efficient buildings sector.</p>	<p>Technical Assistance</p>	<p>Outcome 2: State-of-the-art construction design regulations adopted, and energy use measurement and management IT system requirements introduced.</p>	<p>Output 2.1 A white paper is prepared on the real cost of fossil fuel subsidies to the public budget and the national economy (including reduced GDP growth), with alternatives presented on direct cash subsidies to residents and other means of reducing the impact of phased-out fuel subsidies. (\$217,054).</p> <p>Output 2.2 Country-specific design criteria and standards are developed (\$160,000).</p> <p>Output 2.3 An enforcement policy and associated legislations on Turkmenistan’s building code are developed (\$140,000).</p> <p>Output 2.4 An institutional mechanism to regularly revise and update building energy performance standards is set up (\$100,000).</p>	<p>GET</p>	<p>617,054.00</p>	<p>9,680,675.00</p>
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<p>Component 3: Knowledge sharing, capacity building, and monitoring & evaluation.</p>	<p>Technical Assistance</p>	<p>Outcome 3: Strengthened and better-informed specialists of central ministries as well as of the administrations (khyakimliks) of administrative units (velayats and etraps) on buildings standards compliance monitoring, reporting, verification, and enforcement.</p>	<p>Output 3.1 The capacity of central and local government officials, and administrations is increased to conduct feasibility studies and to properly budget for compliant new buildings (\$59,553).</p> <p>Output 3.2 Life-cycle-cost assessment methodologies are introduced and operationalized within the budget planning procedures of the relevant governmental organizations and their subsidiary design bureaus (\$230,000).</p> <p>Output 3.3 Monitoring, reporting, and verification activities are institutionalized as part of a dedicated divisions of the relevant governmental organizations (\$50,000).</p> <p>Output 3.4 Awareness of the construction companies and subcontractors that are providing materiel and equipment is improved (\$100,000).</p> <p>Output 3.5 Knowledge of the building users on the new energy-efficient technologies in buildings is improved (\$20,000).</p>	<p>GET</p>	<p>459,553.00</p>	<p>6,098,864.00</p>
<p style="text-align: right;">Sub Total (\$)</p>					<p>1,967,937.00</p>	<p>27,119,539.00</p>

Project Management Cost (PMC)

	GET	98,396.00	1,327,104.00
	Sub Total(\$)	98,396.00	1,327,104.00
	Total Project Cost(\$)	2,066,333.00	28,446,643.00

Please provide justification

C. Indicative sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Ministry of Energy	Public Investment	Investment mobilized	16,778,504.00
Recipient Country Government	Ministry of Construction and Architecture	Public Investment	Investment mobilized	11,668,139.00
			Total Project Cost(\$)	28,446,643.00

Describe how any "Investment Mobilized" was identified

Clarification on co-financing: Public investment (USD 1.5 bn), under the existing budget for Ahal Province Centre construction under the aegis of "National Program for socio-economic development of Turkmenistan for 2019-2025" adopted by presidential decree No. 1160. provides relevant co-financing (USD 28,446,643) for all Outcomes. In addition, the Ministry of Agriculture and Environmental Protection under its regular administrative budget is ready to commit to co-financing to upgrade buildings codes in Turkmenistan. This will be clarified during the PPG period. It is also expected that by the end of the project, relevant governmental organizations will provide co-financing for Outcomes 2 and 3 as they cover some of the staffing aspects (e.g. new officers for MRV and enforcement) relevant to the new buildings' codes application. Letters of co-financing will be obtained at the PPG stage. These will confirm amounts, relevance and coordination with relevant project elements.

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	GET	Turkmenistan	Climate Change	CC STAR Allocation	2,066,333	196,302	2,262,635.00
Total GEF Resources(\$)					2,066,333.00	196,302.00	2,262,635.00

E. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount (\$)

100,000

PPG Agency Fee (\$)

9,500

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	GET	Turkmenistan	Climate Change	CC STAR Allocation	100,000	9,500	109,500.00
Total Project Costs(\$)					100,000.00	9,500.00	109,500.00

Core Indicators

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	94331	0	0	0
Expected metric tons of CO ₂ e (indirect)	770287	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)				
Expected metric tons of CO ₂ e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	94,331			
Expected metric tons of CO ₂ e (indirect)	770,287			
Anticipated start year of accounting	2023			
Duration of accounting	20			

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)	490,029,000			

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
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Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	35,000			
Male	35,000			
Total	70000	0	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

* The life-time direct emission reductions are to be achieved from the two pilot buildings during their lifetime (20 years) and building codes getting into force in year 4 of the project. The consequential (indirect) emission reductions are expected from the replication of energy efficiency technologies in 130 buildings right after the project closure. These figures were calculated by using GEF Energy Efficiency Tool which is provided in Annex B of the PIF. The calculations are expected to be confirmed during the PPG phase.

Part II. Project Justification

1a. Project Description

1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)

A nation of approximately 5.8 million citizens, Turkmenistan is in southwestern Central Asia, between the Caspian Sea and the Amu-Darya River. Turkmenistan is bordered by Kazakhstan to the north, Uzbekistan to the northeast and east, Afghanistan to the southeast, and Iran to the south. The population of Turkmenistan is growing by approximately one per cent per year. The country is also undergoing a steady shift toward greater urbanization, with an increasing proportion of citizens living in cities. Figure 1 shows the increase in the total population and urban population of the country between 2000 and 2014.

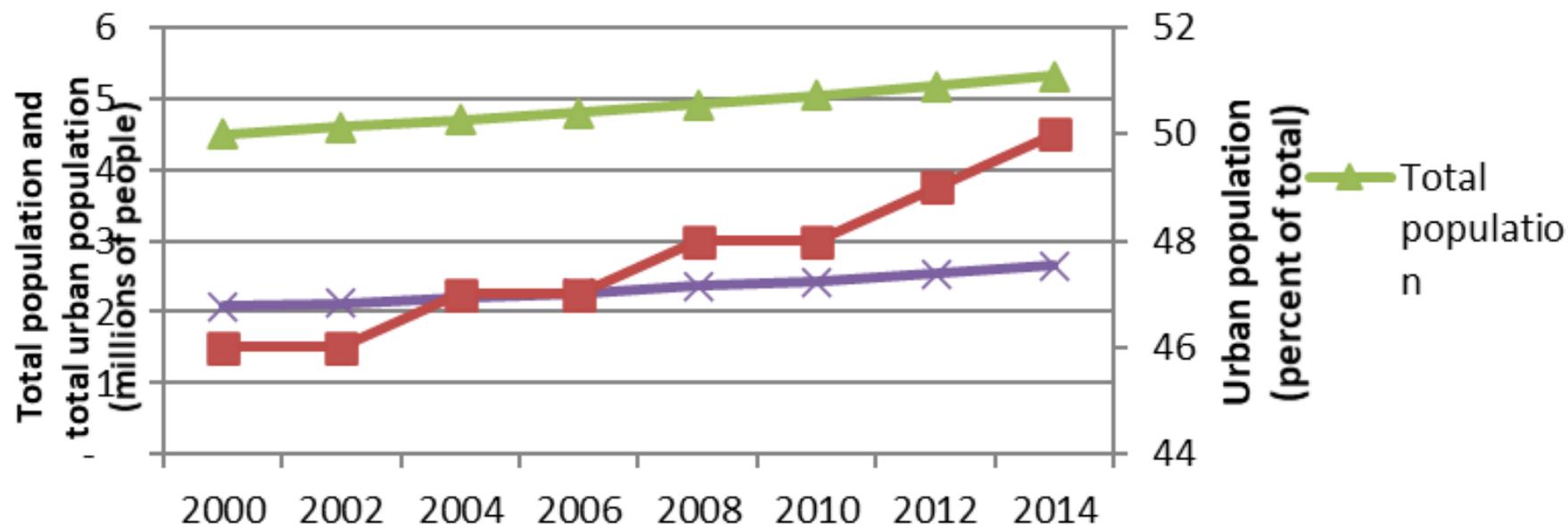


Figure 1. Total Population Growth and Urban Population Growth in Turkmenistan, 2000-2014

The most notable recent urban growth in Turkmenistan has taken place in cities, particularly in its capital city of Ashgabat. Ashgabat's population increased by about 70 percent from about 524,000 in the year 2000 to more than 900,000 in 2014. This population growth has triggered a construction boom, construction of many major residential building projects and expansion of associated public buildings and related infrastructure. With rising population of the country and expanding urban development, energy consumption and GHG emissions in the residential sector are also expected to rise exponentially. Preliminary estimates suggest, by 2050 energy consumption in residential sector is expected to increase by more than 30%. Today, the largest number of residential buildings in Turkmenistan are being built in cities and provincial/district centres. Newly developing Ahal Province Centre in Gokdepe district can be a prime example with more than 150 multi-family residential and numerous other social and administrative buildings. Rapid urban development and enhancing

construction sector – a cornerstone of economic development of the country for more than 10 years now, substantially increases pressure on energy, water and other resources. At the same time, considering that the residential sector has a huge potential to reduce emissions, within the National Strategy on Climate Change the Government of Turkmenistan identifies housing sector (along with other high GHG emitting sectors) as one of the priority areas for reducing GHG emissions that will help to achieve its commitments within the Paris Agreement. Key threats, their root causes and associated barriers that are in relation to project context are provided below.

Threats and Root Causes

1. Continued roll-out of legacy technologies and their lock-in in 1 million sqm of built space per annum

Despite the fact significant funds are being allocated for this flagship project in Ahal province, the normative environment in the country as regards the construction standards has not been improved since 1980s. This means that 1 million sq.m space risk being built without showcasing latest buildings climate resilience and energy efficiency technologies that already exist in the market. This means the increased energy expense might be locked in for the next 100 years without the Project intervention. Over the past two decades, the Government of Turkmenistan has ratcheted up residential construction. The market grew about 40% every 6-7 years and this trend will continue. Whereas in the year 2000, the living space per person in Turkmenistan averaged 17.8 m², in 2007 it was 19.9 m², in 2020 the figure exceeded 21.1 m². Residential buildings stock in Turkmenistan can be divided into three categories:

1. One- and two-story private houses, often standing in streets, that use traditional knowledge to maintain a comfortable indoor temperature. These houses often use electric heating and electric air conditioning, although some, especially in Ashgabat, receive heat from district networks. These houses were mostly built on the initiative of the tenants; and for a very small segment of residential mansions, design and construction work is carried out by local companies.

2. Publicly-owned modern multi-apartment high-rise residential buildings built in the last 20 years. These houses are built of reinforced concrete; mineral wool and marble cladding are used to reduce heat loss. They mainly rely on stand-alone (single or multi-building) gas boilers for heating and hot water, and chillers for cooling. The customers of these buildings are city khyakimliks, ministries, state enterprises; many of them are being built by Turkish contractors. At the same time, a certain part of the construction documentation and the construction itself is carried out by local subcontractors. These buildings represent the overwhelming majority among new buildings in the city of Ashgabat. It's with this segment of buildings and builders that the Project will be working with.

3. Publicly-owned multi-storey apartment buildings built between 1960 and 1991 in "micro-districts", which are mainly owned by khyakimliks. Construction technology - multi-story brick and expanded clay structure with plaster lining; there is no insulation of roofs or external walls. But this group also includes prefabricated or reinforced concrete buildings, many of which were modeled on projects from the former Soviet republics. Many apartments in these houses are heated by central heating (often coupled with electric heaters, where central heating is unreliable) and cooled by air conditioners. It's with this segment of the buildings that the 2010-2017 Energy Efficiency in the Residential Buildings Sector of Turkmenistan Project worked with by implementing pilot investment projects whereby the project financed incremental costs of energy efficient equipment for three newbuilds and for three existing buildings.

2. Absence of innovative climate mitigation technologies and related experience

The Government has long built part of its infrastructure according to the latest technology requirements (such as energy grids or some facilities such as airports) but it still lacks solid data to justify internally incremental investment in best available building-level technologies, particularly when it comes to non-high-profile residential and public buildings despite the fact these represent up to 29% of all final energy consumption (and more if electricity alone is concerned). This lack of proper justifications and pay-back (feasibility) assessments come on the heels of perceived complexity and perceived high cost of additional investment per sqm of built space. If the project could showcase how 1% of additional expenditure could generate 10-15% of life-time savings for the Government and residents over the life-time of the premises, the perception is likely to be reversed. Lack of information on the new requirements applied to the quality of goods and types of materials and equipment to be in demand threatens to become a major impediment to private sector growth in the construction sector particularly in light of the mainstreaming of such energy efficiency projects going forward on the national level. To improve knowledge of the new requirements, the Project will work with private-sector stakeholders (vendors, suppliers, producers, dealerships) to train them in understanding the requirements to enable their successful bidding for public-sector tenders for construction of NZEBs. The Project will train trainers as well to ensure the NZEB materials and equipment expertise remains in the country after the end of the Project.

Key barriers

Barrier 1. Low tariffs and excessive pay-back periods

One of the reasons for non-consideration of the best available technologies is the lowest energy rates in the world that the residents enjoy for all types of utility services: electricity, central heating, gas, water, and solid waste disposal. Since its independence in October 1991, the population of the country has been strongly supported via subsidized utility services and the Government fears that raising rates would negatively affect the quality of living by making essential services costlier to residents. However, in the last 4-5 years Government has taken steps to transition and adopt market measures in management of national economy and gradually phasing out subsidies for the main resources with free of charge water, natural gas and electricity for population have already been scrapped from 2019. In order to assist the Government to rethink the fuel subsidization policy (which is adopted by presidential decrees), the Project will produce as part of Output 2.1 a dedicated Fossil Fuel Subsidization White Paper that will argue for the beneficial economic and political nature of a 10-year phase-out of fuel subsidies. The White Paper will detail results of similar policy steps across the globe and present conclusions and a step-by-step guide, including draft regulations to effectuate a transition to a zero-subsidy regime for fossil fuels.

Barrier 2. Lack of standards and technical capacity for energy efficient buildings sector

The Government is constrained in its technical capacity to design legislation to enact and implement those technical solutions on a wide scale for all new builds even if compelling life-cycle-costing analyses of cost-savings for both highly energy efficient residential buildings for EMIS-equipped public buildings are prepared and presented. The staff of the Ministry of Construction have been trained to implement Soviet-era construction standards, most of which are dating back to 1970s and 1980s. These standards take no account of the energy efficiency requirements and climate change mitigation and resilience needs. Nor do the standards take into account the harsh continental climate conditions of Turkmenistan that require more central cooling in summer than in the more moderate climatic conditions of Russia (which is where the standards were designed in the USSR). The 2010-2017 Energy Efficiency in Residential Buildings Project did successfully design three standards: “Roofs and Roofing” (2015), “Residential Buildings” (2015), and “Building Climatology” (2016). However, given the Paris Agreement push to move towards a net-zero world by 2050, it’s essential that Turkmenistan adopts already adopted and enforceable NZEB standards for all newbuilds. This means the building codes need to be further revised to achieve reductions of at least 50% relative to the standards currently in place. Project will aim to fill that gap by hiring experts that will transpose existing best practices in such regulations on a comprehensive scale. The Project will also make recommendations for creation of relevant oversight bodies. Their staff will receive required trainings. Trainings for trainers will also be provided to ensure that after the project is over, new staff of the relevant expert and oversight bodies will have human resources to tap into to bring the staff knowledge levels up to the required level of technical expertise. Finally, the project will demonstrate these new technologies in public multi-family residential buildings which will provide capacity building options to government organizations and also will create the baseline for the desired standards and regulations for Turkmenistan. Below, a schematic description of the proposed project development hypothesis is presented.

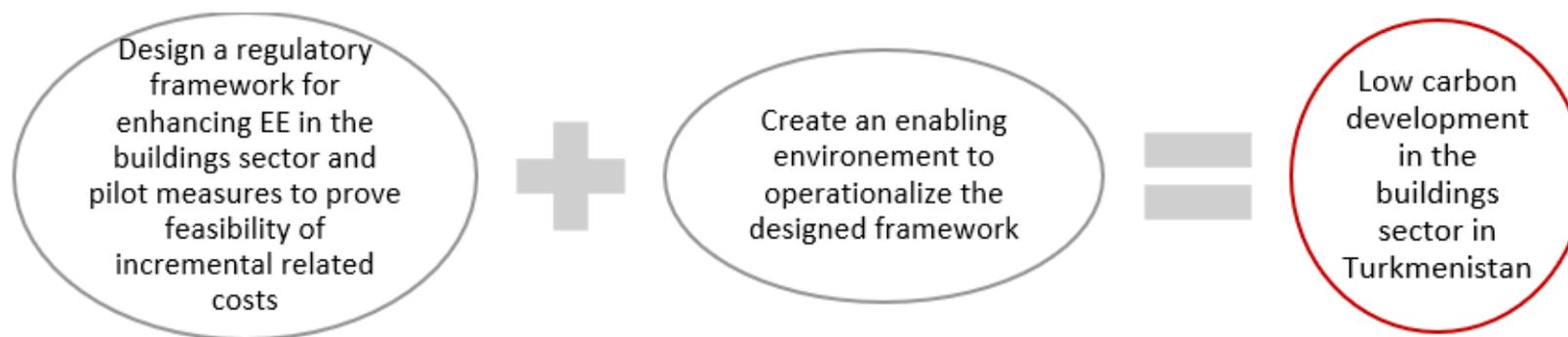


Figure 2: Fundamental hypothesis for project development

The long-term goal of the proposed project is to develop energy efficient construction sector in Turkmenistan that is environmentally sustainable and supports the country's low carbon development and climate mitigation plans. The project aims to reduce greenhouse gases (GHG) emissions by improving energy management and reducing energy consumption in the building sector of Turkmenistan.

2) The Baseline Scenario and any associated Baseline projects

The National Climate Change Strategy of Turkmenistan (adopted on 19 September 2019) considers energy efficiency, energy savings and the increased use of alternative energy sources as the main priorities of the policy oriented towards reduction of GHG emissions. According to the Strategy, priorities for developing the housing and municipal services sector among others include: (i) Improving performance efficiency of municipal heating supply systems, (ii) Improving regulatory framework for construction standards and rules towards ensuring energy efficiency and heating supply security of buildings; (iii) Promoting public awareness raising and motivation activities.

In line with its strategic vision, the Government participated in two GEF-financed projects over the past decade that aimed to assist in its efforts to address climate change in the housing and related urban sectors. In 2010-2017, the Government implemented the GEF project "Improving Energy Efficiency in the Residential Buildings Sector of Turkmenistan (2010-2017)", which aimed to reduce greenhouse gases (GHG) emissions by piloting some energy management and energy consumption reduction technologies in the residential building sector through limited building code interventions (introducing some updates to put the building code in line with coterminous innovations in Russia) and demand-side management partnership with Turkmengas – the main gas grids operator. In 2018, the Government's partnership with UNDP-GEF was expanded by a broader range of issues of sustainable urban development focusing on the related urban infrastructure (such as city public and private transport efficiencies, street lighting energy efficiency, electric grid efficiency and some hotel sector efficiency). Below, ongoing baseline programmes that are present in Turkmenistan are summarized.

National Implementing Organization	Brief description, time period, budget, and relevance to project
Ministry of Construction and Architecture, Ahal Province Municipality and other relevant Government Ministries and entities	<p>The Programme of Socio-Economic Development of Turkmenistan for 2019-2025 period This Programme outlines key strategic areas for sustainable development of the country in indicated period by investing among others in construction of modern urban and rural developments with improved livable conditions for residents and environmental considerations. The action plan of the Programme also envisages relevant measures to improve policy and regulatory framework to enable successful implementation of the strategic objectives of the programme. Further to that programme, the President issued Decree No.1160 of March 4, 2019 that decreed the construction of the new Ahal city agglomeration which should feature modern technologies with smart house, smart buildings and other modern efficient management tools to showcase the achievements of young country in line with the global technological developments. <u>Synergies:</u> This government investment programme under Decree 1160 mentioned above is a major source of project co-financing, as the programme goals align fully with the proposed project in the area of building modern, energy efficient and smart buildings as well as drafting legislation and capacity building. <i>Period: 2019-2025</i> <i>Total budget: 1.5 billion USD (allocated for the construction of the new Administrative Centre of Ahal Province)</i></p>
	<p>Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Avaza (GEF Project ID # 9279; UNDP PIMS # 5452) (2018-2024) The Sustainable Cities project is aimed to promote and implement integrated low-carbon urban systems in Ashgabat and Avaza, thereby reducing GHG emissions and creating other environmental, social and economic development benefits. Among its outputs relevant to the climate change mitigation</p>

Ministry of Agriculture and Environment Protection	<p>...and economic development benefits among its outputs relevant to the climate change mitigation are the following:</p> <ul style="list-style-type: none"> - Reduction of waste volumes and increase in the uptake of recycling in Ashgabat - Reduction of GHG emissions of tourism facilities and infrastructure in Avaza (in hotels) - Reduction of water use and waste volumes in hotels in Avaza - Improved managerial and technical capacity of planners, officials, and facility managers in Avaza enhanced via training - Development of policies of integrated and scaled-up green urban practices (such as sustainable transport strategies, energy efficiency and renewable energy laws). <p>The Sustainable Cities project reached its mid-term point in August of 2021. It was instrumental in the adoption of the following laws:</p> <ul style="list-style-type: none"> - National Strategy of Turkmenistan on Development the Renewable Energy till 2030 (approved by the Decree of the President of Turkmenistan on December 4, 2020) - Law of Turkmenistan "On Renewable Energy Sources (adopted by the Parliament on March 13, 2021) and the following, - Draft Law of Turkmenistan "On Energy Efficiency" (under the discussion in the Parliament); - National Strategy of Turkmenistan on Waste Management (a draft has been developed); - A number of draft by-laws on energy efficiency, renewable energy, waste management, air pollution control framework Renewable Energy Law. <p>None of the above-mentioned regulations however deal with improved the legislation governing construction standards and therefore no impact is expected in the baseline in terms of improving the climate resilience of the building sector.</p>
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3) The proposed alternative scenario with a brief description of expected outcomes and components of the project

The Project will contribute to the Government's goal by improving regulatory framework in the construction sector by upgrading the existing building codes by adoption of new norms and bylaws (construction standards - SNiPs) to increase energy efficiency of residential buildings and to mandate installation of Energy Management and Information System (EMIS) in certain types of public buildings (which have highest energy rates), including a gradual installation of energy management and information system (EMIS) in all such new public buildings. This will be achieved through the design, piloting and modernization of two new public residential energy efficient buildings (multi-family residential buildings) and installation of an EMIS in one public building – an administrative building) to demonstrate energy efficiency gains and evidence-based policy making in the construction sector to be applied in all new residential and public buildings being developed across the country. It is assumed that by the end of the project the replication of the proposed energy efficient (EE) solutions will be initiated in at least 130 multi-family residential buildings while 5 new public buildings will feature EMIS to consolidate the evidence base for policy making. The Project will also aim to build national capacity across the country on energy efficiency solutions via knowledge building and management, dissemination of results through specialized capacity building trainings and awareness raising events.

The implementation of the project will contribute to and facilitate the implementation of the country's revised Nationally Determined Contributions (NDC), in particular, reduction of GHG emissions from residential sector via the piloting and adoption of relevant energy efficiency solutions and measures in new multifamily residential and EMIS in public buildings as well as their subsequent replication across the country. The GEF support of the project will be key for Turkmenistan, in its efforts to make transformational shifts towards low emission and sustainable development of at least the construction and residential sectors, with potentially triggering the similar effects for other priority and high emitting sectors.

The long-term solution for a sustainable reduction of GHGs from the buildings sector is to reduce and potentially stop construction of any new residential and public buildings that have a GHG footprint. Modern construction and engineering technologies in countries with similar geographic location permit construction of nearly zero-emission buildings (NZEBs). NZEB standard means that a building has a very high energy performance and a zero or a very low

amount of energy should be required to maintain it and that could be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby. The EU Energy Performance of Buildings Directive Search introduced the NZEB standard as a mandatory requirement for all new buildings in EU countries starting from 2021 (while for all new **public** buildings that standard came into force earlier – from Jan 1, 2019). Turkmen authorities currently do not have knowledge of such standards leading to following misconceptions: 1) that incremental cost will be prohibitive and 2) that it will not pay back during life-time of the buildings. These misconceptions are exactly the area that the pilot buildings will aim to dispel. The project will demonstrate that the incremental costs are miniscule in net-present-value (NPV) terms over the life-time of the buildings even at the tariff inflation scenarios that the Government is currently entertaining.

The development context for this project is also consistent with the UNDP and GEF priorities globally and in Turkmenistan as well. In particular, it falls within the:

GEF-7 Strategic Objective CC – 1 “Promote innovation and technology transfer for sustainable energy breakthroughs”. It also falls under Objective 2. “Demonstrate mitigation options with systemic impacts” and Objective 3. “Foster enabling conditions for mainstreaming mitigation concerns into sustainable development strategies”.

The project’s theory of change is that multiple types of savings and economies of scale can be obtained when modern buildings technologies are utilized such as reduced commercial energy losses (which stand at over 30% in some built areas in Turkmenistan). This is why the Project targets piloting the introduction of EMIS not just in residential buildings but also in a public building pilot as its results could equally be applied to any large industrial enterprise (most of which are state-owned and therefore directly managed and controlled). The demonstration effect will be translated into legislation that will promote an NPV-based approach to buildings construction cost estimate process. The Project will also estimate the amount of savings that the Government will benefit from in case the new-build regulations are rolled out across the next 10-15 years. Similar simulations will be made for larger facilities (such as sports venues and hotels, among others) that are in the pipeline of large public construction investment programs already anyway.

Reduced energy consumption in the buildings sector will have a five-fold benefit: reduced cost to the user; reduced operational cost to the public utility because of reduced demand; reduced capital costs to the utility because the reduced growth in loads requires less infrastructure development; reduced pollution as a result of power generation; and reduced environmental impact due to extended product lifetime.

During the implementation of EMIS, special attention will be paid to ensuring that installed EMIS are from a pool of tested developers with a record of past roll-outs across thousands of buildings, preferably from the countries where UNDP has already piloted such EMIS roll-outs on a large scale (such as has been the case in Croatia and Serbia). The project will train facility managers a change in behavior would occur at both the buildings occupants level and the building management itself.

Component 1 of the project focuses on demonstration of the costs involved and the energy efficiency gains to be achieved via the upgrade of the new buildings to a nearly zero-energy standard to prove that such a standard is economically beneficial to the public budget during the life-time of the measures and that the measures can be procured and installed locally. These two pilots will serve a real example of the proof of concept with a goal to create enough incentives for the wide-scale application of the new technologies so that - by the end of the project - no grant funding would be required to scale-up construction of buildings based on NZEB design. The tested technologies will subsequently become standard in all new building construction projects as part of a new 10-year public investment program in construction of NZEBs. Due to lack of administrative, budgetary and financial capacities of the National Implementing Partners (IP), this component will be operationally executed by a Responsible Party (RP)/Third Party, who will be identified and selected during the PPG phase. The Ministry of Energy will lead coordination of the implementation of the Component 1 on a technical level in close collaboration with the Ministry of Construction and Architecture of Turkmenistan.

Output 1.1. The project will invest funds in modernization of two residential buildings of a combined footage of 9,532 sqm. For this, the project will support the development of country-specific design criteria and standards for both the building envelope and the related HVAC systems, including new construction materials (such as those utilizing latent heat storage materials) as well as renewable energy applications, such as energy efficient lighting, heating, cooling, insulation, water supply and grey water use in the sewage systems as well as renewable energy generation (via piloting installation solar PV roof-top panels for heating and hot water use). These design criteria will help the country transition to a highly energy efficient standard with the ultimate goal to achieve a nearly zero-energy building (NZEB) standard for newbuilds. NZEBs are highly efficient buildings with extremely low energy demand, which is met by renewable energy sources. Such buildings produce as much energy as they consume, accounted for annually. In order to achieve their net zero energy goals, NZEBs first

sharply reduce energy demand using energy efficient technologies and then utilize renewable energy sources (RES) to meet the residual demand. In such buildings, efficiency gains enable the balance of energy needs to be supplied with renewable energy technologies. In the EU, the Energy Performance of Buildings Directive requires that EU countries transition in new buildings construction to a nearly zero-energy standard from 2021, while all new public buildings had to be nearly zero-energy already in 2019.

Through the implementation of these pilots the following impacts will be achieved:

- 9,532 sq.m of new buildings will be constructed with project proposed EE solutions. By the end of the project, it is assumed that the Ministry of Agriculture and Environmental Protection, the Ministry of Construction and Architecture together with the Ministry of Energy and Ahal Province Municipality will initiate the replication of the project proposed innovative energy efficiency solutions in at least 130 multi-family residential buildings and installation of EMIS in 5 administrative buildings with a total sq. footage of about 0.6 million sq. m of built area using Project's EE solutions. More accurate calculations are expected to be conducted during the PPG phase;
- 1,328 residents will benefit from the measures. The area targeted by the project represents an area adjacent to the city of Ashgabat. This area is administered by a separate administration and covers a land area of 13.54 sq. km. The Government plans to build 1 million of sq. m of the built space to house and provide services to 70,000 residents. More information on the location of the Project is presented in Annex A. Although the estimated number of direct beneficiaries from project pilot buildings is approx. 1,328 residents, the total number of indirect beneficiaries is projected to be 70,000 residents that will use 10 kindergartens, 19 schools, and a number of administrative public buildings planned for construction in the town (hospitals, social care institutions, institutions of justice, culture, sports).
- 10,952 tCO₂e of direct GHG savings will be achieved from the two pilot buildings during the time-frame of the Project (this is part of the total life-time direct emission reductions target of the Project, which is 94,331 tCO₂e, which is also taking into account the emission reductions from change in buildings codes). More precise calculations, including for assumed replication, are expected to be made during the PPG phase;
- approx. 10% savings in operating costs for energy in renovated buildings;
- around 300 jobs to be created during the implementation of the Project proposed EE interventions;
- improved air quality in the new residential buildings and better work environment for students and employees of the affected public buildings.

Output 1.2 Investment in the energy management and measurement systems (EMIS) and related IT technologies in the two pilot residential buildings of 9,532 sqm and one public administrative building of 10,130 sqm with potential for expansion and replication following the end of the Project. The IT systems will integrate all the building-level information into a single scalable advanced energy management systems (EMIS) that will provide the Government vital real-time data on the actual energy consumption of the new buildings to enable comparisons with non-NZEBs. Lessons learnt from the testing of EMIS will be used to scale up the system within Turkmenistan. Also, the EMIS piloting activities will create the capacity building opportunities to the Government staff that will be working on the system at a later stage.

Output 1.3 The Project will assist the Government to adopt an additional 10-year public investment program (valued at \$20 million for years 2026-2035) for new construction under new building codes. The program preparation process will feature new procedures, such as feasibility studies justifying longer pay-back horizons by taking into account all buildings life-cycle costs, including energy costs.

Component 2 of the Project aims to define and put into operation the necessary policy improvements, standards and regulations as well as an institutional mechanism to scale up energy efficiency in buildings sector. Due to lack of administrative and financial capacities of the National Implementing Partners (IP), the Component 2 will be operationally executed by a Responsible Party (RP)/Third Party, to be identified and selected during the PPG phase. This may be the same RP selected for execution of the Component 1. The coordination of the implementation of this component on a technical level will be carried out directly by the Ministry of Construction and Architecture of Turkmenistan.

Output 2.1. The project will produce a white paper for the Government of Turkmenistan to support their efforts on fossil fuel subsidy reform. The exercise will include assessment of costs of current policies to national budget and economy and also define alternatives to repurpose these subsidies in line with Turkmenistan's national climate goals. The white paper will also define associated public outreach plan and stakeholder engagement approach to support Government to transition to fossil fuel public budgeting.

Output 2.2. The Project will produce the packages of relevant normative documentation (construction standards, amendments to laws and bylaws) to transpose the tested technologies in both the regulations concerning modernization of existing buildings and improving climate resilience of new-builds. The Project will assist the Government in the adoption of state-of-the-art energy efficient design requirements (aiming at the level achieved by NZEB norms) for

new residential buildings aimed to achieve significant construction and lifecycle cost reductions. For this, the project will support the development of those design criteria and standards that fill the gaps of outdated Soviet-era construction standards. The Project will assist the Government of Turkmenistan in justifying that such a standard is economically beneficial to the public budget. Such proof-of-concept will ensure that by the end of the project, no grant funding will be required to scale-up construction of buildings based on NZEB design and that tested technologies will subsequently become standard in all new building construction projects (although the project conservatively estimates that only 85% of all newbuilds will feature highly energy-efficient designs in the Project's Alternative Scenario). The Project will also enhance the capacity of the Ministry of Agriculture and Environmental Protection, Ministry of Energy, and Ministry of Construction and Architecture of Turkmenistan and specialists from the khyakimliks of velayats and etraps (municipalities of provinces and districts) on conducting an expert assessment of energy efficient houses to ensure compliance with new norms and standards (SNT) and minimum energy consumption requirements in the buildings sector. The Project will also work with the national government as well as the administration of the Ahal Velayat municipality of Turkmenistan to align their long-term buildings construction and modernizations plans to ensure continuity of the tried-and-tested construction/reconstruction technological approaches.

Output 2.3. The Project will design a building code enforcement policy for the Government. The enforcement policy will feature a description of the mandate of a new building code policy enforcement division within the Ministry of Construction and Architecture and draft ToRs for all staff positions. Currently, different departments of the Ministry are in charge of monitoring compliance with a variety of building code provisions making it difficult to evaluate the efficiency of such monitoring activity and leading to a dispersion of responsibility across teams and thinning of competence levels. This output will result in direct emission reductions of 83,379 tCO_{2e} (in total, the Project target of direct emission reductions is 94,331 tCO_{2e}, that is also considering reductions from 2 pilots under component 1). The buildings codes are expected to be put in force in the last year of the project, and initially 10% of the new constructions are expected to comply with these legislations. Please see Annex B for the details of the calculations.

Output 2.4. The Project will further assist the Government to set up an institutional mechanism to revise and update building energy performance standards regularly in line with regional and international best practices. This is important because best practices are evolving. The European Union Commission as recently as December 2021 issued a proposal* (*Available in all EU languages here: <https://energy.ec.europa.eu/select-language?destination=/node/1>) to revise the NZEB directive that will transition newbuilds in the EU from current NZEB to zero-emission building (ZEB) by 2030, aligning the energy performance requirements for new buildings to the longer-term climate neutrality goal of the EU. According to the directive's proposal, a zero-emission building is defined as a building with a very high energy performance, with the very low amount of energy (that might still be required) to be fully covered by energy from renewable sources and without on-site carbon emissions from fossil fuels. The Government will benefit from receiving assistance from the Project in setting up a unit that could continuously monitor such developments and design appropriate upgrades of the bylaws and regulations along with the enforcement routines.

Component 3 of the project will be structured around capacity building, knowledge management and monitoring. It will target buildings' owners and users by informing them on the new technologies they will have to deal with in the coming years. The Component 3 will be operationally executed by the Responsible Party (RP – could be the same RP, who executes Components 1 and 2) to be identified and selected during the PPG phase. The technical coordination of the implementation of the Component 3 will be jointly conducted by the Ministry of Construction and Architecture, the Ministry of Energy and the Ministry of Agriculture and Environmental Protection of Turkmenistan.

Output 3.1 will specifically address government capacity to assess buildings projects in the area of new construction and energy efficiency. Officers of the Ministry of Agriculture and Environmental Protection and the Ministry of Construction and Architecture will be trained to prepare economic assessments and feasibility analyses for several building types for both assessing the payback periods for modernization taking into account buildings' life-times based on the amount of saved gas (all natural gas is produced by a state-owned monopoly so all savings of gas accrue to the Government, and Turkmenistan has access to the 4th largest global reserves of natural gas). The staff of the Ministry of Agriculture and Environmental Protection, the Ministry of Construction and Architecture, and of the Ahal district and Ashgabat city administrations will also be trained to better understand regulations for the purposes of procurement of the relevant materials and equipment as well as to create a monitoring and enforcement division. A total of 320 officers of the Ministry of Construction and Architecture, Ahal district, and Ashgabat city administration will be trained in the data collection, preparation of feasibility study assessments, and execution of the monitoring and verification work.

Output 3.2 will be equipping the Government with accessible life-cycle-costing methodologies and case-studies, documenting new experiences and lessons learned into targeted messages disseminated to relevant divisions of the Ministry of Construction. This will be done through multiple knowledge management platforms, including web-based communication channels, newsletters, lesson notes, case studies, and workshops.

Output 3.3 will produce monitoring, reporting, and verification (MRV) activities become institutionalized as part of a dedicated organizational structures of the Ministry of Construction. The Project will help the Government to draft mandate and the staff structure for the MRV function, including ToRs for key staff positions and continuous training needs.

Output 3.4 will improve the awareness of the business owners and leaders. The Project will train all business owners of the businesses involved in the supply, production, installation, and service of the energy efficient building technologies and IT systems. The Project will work with relevant industry associations and largest international equipment producers to identify the largest of such businesses. Overall, over 800 employees from at least 20 private-sector companies will be trained in identification of opportunities related to energy efficiency, production, installation, and service of the energy efficient building technologies and IT systems, with at least 35% of them being women.

Output 3.5 will improve the knowledge of building users of the new technologies and usage guidelines. The Project will introduce the technologies to the occupants of the two new buildings as well as to the maintenance staff along with the maintenance staff of other buildings in the Ahal municipality to ensure the knowledge is transferred in case of possible staff rotations.

4) Alignment with GEF focal area and/or Impact Program strategies

The project is consistent with GEF objectives and will contribute to the outcomes and outputs of the GEF-7 Programming Directions.

GEF-7 Climate Change Results Framework

Objective	Strategic Priority	GEF-7 indicators
CC Objective 1. Promote innovation and technology transfer for sustainable energy breakthroughs	Accelerating energy efficiency adoption	GHG emissions avoided
CC Objective 2. "Demonstrate mitigation options with systemic impacts".	Building sustainable cities	Project contribution: 94,331 tCO ₂ e life-time direct emission reductions. 770,287 tCO ₂ e consequential (indirect)
CC Objective 3. "Foster enabling conditions for mainstreaming mitigation concerns into sustainable development strategies"	Capacity-building	

5) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

<i>Baseline Scenario</i>	<i>Alternative</i>	<i>Global Environmental benefits</i>
<p>Turkmenistan has 4th world's largest gas resources. With all these energy reserves, coupled with its landlocked status and a complete dependency on just two land pipelines (mainly to China and to a small extent to Russia), little attention is paid to energy efficiency (there's more gas than could be exported). The TAPI pipeline (Turkmenistan-Afghanistan-Pakistan-India) would correct this situation as it is projected to end in an LNG terminal that would for the first time in the history of Turkmen energy export permit a global diversification of the gas export client base is still years away from its completion: only half of it up to the border of Pakistan) has been built. This means that in the future, there will be limited physical opportunities for the expansion of gas exports. As a result, stimulation of energy efficiency will not be a top priority.</p> <p>The Government of Turkmenistan will continue to face several challenges including: (1) Lack of Policy, Legal and Regulatory Framework that are supportive of comprehensive building initiatives that would be in line with best global practices, (2) Limited institutional capability to facilitate energy efficiency programs implementation and follow up, (3) Limited implemented EE projects and programs and absence of evaluation of EE measures impact, (4) Low Public and Professionals Awareness on EE initiatives applications and programs; and, (5) Lack of Capability from national public and private sector to implement EE projects, and/or provide EE services.</p>	<p>A good enabling environment is in place. Key stakeholders from Government, private sector, and beneficiaries are capable in understanding, managing and implementing sustainable EE measures. The enabling environment triggers the development and diffusion of mitigation technologies that provide market and job opportunities.</p> <p>Individual and institutional national capacity are developed and strengthened. Top notch expertise and technical knowledge in the EE buildings sector are available.</p> <p>A range of EE buildings upgrade and EMIS installation programs and applications across and within sectors are promoted, implemented, scaling up and replicated, leading to significantly reduce the GHG emissions in the energy sector.</p> <p>Knowledge management, capacity development and awareness raising are conducted to promote a better environment.</p> <p>A monitoring, verification, reporting, and enforcement division is established with a clear mandate within a single responsible ministry and is fully functional. New building code performance standards are known by the design and engineering community, the suppliers, and the enforcement officers.</p>	<p>CCM benefits</p> <p>94,331 tCO₂ Direct project emission reductions from pilot projects.</p> <p>770,287 tCO₂e consequential project emission reductions could be expected from the replication of the pilot buildings.</p>

6) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

Construction of public buildings and multi-storey residential houses in Turkmenistan are carried out based on outdated and universal Soviet building codes and standards, mostly developed in 1980s, which take no account of harsh continental climate conditions of the country with very hot summers and mild winters with occasional cold spells of up to minus 20 degrees below zero. Consequently, housing sector consumes vast amount of energy for cooling and heating systems making it account for about 18% of the country's total GHG emissions. The National Climate Change Strategy of the country identifies housing (after oil and gas) as priority sector with substantial potential for GHG emission reduction via introduction and application of energy efficient measures, including the improvement of relevant regulatory environment. Considering the rapid urban growth and large-scale construction of both administrative and residential buildings and to realize the GHG emission reduction potential of building sector, the Ministry of Construction and Architecture plans to introduce energy efficiency measures into construction sector by upgrading relevant building codes and standards as well as developing relevant

regulatory papers to gradually adopt EE standards as mandatory for all new buildings. The proposed project will assist the relevant Government ministries, who critically lack technical capacity, in their endeavours on adoption and gradual country-wide application of modern EE standards in public and residential buildings. The project proposed EE solutions are expected to demonstrate clear benefits of energy saving in the expanding building sector and contribute to the long-term climate change mitigation targets through life-time direct emissions reductions. During the preparation of the PIF document, the expected GHG emissions reductions from project interventions have been calculated as 94,331 tCO₂eq. These reductions will come from the energy efficiency related GEF investment in 2 public residential buildings (10,952 tCO₂t, component 1) and changes in the building codes (83,379 tCO₂e, component 2), which is expected to put in force in the last year of the Project and initially impacting 10% of the new buildings in the country. Besides, the project expects immediate replication of energy efficiency techniques in 130 new buildings which will result in consequential emission reductions of 770,287 tCO₂e[1]. Moreover, the project will lead to energy savings of 490,029,000 MJ. Successful implementation of the project and expected improvement of relevant regulatory environment, which would lead to gradual mandatory application of the new EE standards for all new buildings will significantly facilitate country's GHG emission reduction efforts and have profound long-term positive environmental and economic effect for the population.

[1] The calculations were made by the GEF's energy efficiency tool, and they are presented in Annex B. A more detailed calculation will be conducted during the PPG phase.

7) Innovation, Sustainability and Potential for Scaling up

Innovation

The most conceptually innovative aspect of the Project is a move toward NZEB buildings for a Central Asian country. Such standards have just recently become an accepted and mandatory practice in the EU and few other jurisdictions in the world come close. However, a straightforward transposition of the standard is not possible because the Government has an approved mechanism of "vetting" upgrades of the building codes. This vetting process includes the preparation of detailed feasibility justifications, which currently feature 3-year investment horizons and do not consider buildings and equipment life-cycle costs. The Project will provide the required policy support to the Government along with template economic justifications based on actual and projected energy prices during the lifetime of the buildings. The introduction of IT solutions and "smart" technologies for building energy management to monitor building energy use, spot immediate and most cost-effective opportunities and effectively monitor performance and improvement is another innovation that the Government appreciates. Without a good EMIS, it is impossible to move on with any decision-making instruments because the savings are not "visible". The EMIS can "spot" immediate and most cost-effective opportunities and effectively monitor performance/improvement. UNDP has an excellent track record of piloting EMIS, which received nationwide replication in Croatia and is now being rolled out in other countries. The Croatian EMIS has been listed as international best practice for ICT solutions in buildings* ([*http://www.unece.org/fileadmin/DAM/energy/se/pdfs/geee/pub/ECE_Best_Practices_in_EE_publication.pdf](http://www.unece.org/fileadmin/DAM/energy/se/pdfs/geee/pub/ECE_Best_Practices_in_EE_publication.pdf)).

Sustainability

The project design and implementation will pay close attention to sustainability, and its three components:

- financial, via preparing business cases for new builds with positive NPVs during the buildings' lifetimes (as per Outputs 3.1 and 3.2),
- institutional, via transposing EU legislation and capacity building to monitor, implement, and enforce it (Output 2.1),
- socio-economic, via preparing detailed calculations of affordability for both residents to pay for the sophisticated equipment and IT systems (such as provided by Output 1.2), and for the Government to still be able to afford it given savings from the freed gas volumes available for experts.

During implementation, the project team will pay close attention to the likely sustainability of project results, including developing the project exit strategy. With respect to institutional sustainability the team will ensure the key partner institutions have the individual and technical capacities to support the continuation of project results, including ensuring that the new construction standards are mandatory and used in all public procurement going forward from Year 4 of the Project.

To sustain the coordination of the integrated approach, the project will establish a working group within the Ministry of Agriculture and Environmental Protection and the Ministry of Construction and Architecture involving relevant officers responsible for such issues as construction standards, buildings energy, and buildings water management (Output 3.3). The Project will work through (and assist in establishing, where these have not yet been constituted) relevant state, regional and local administrations in order to improve communication, collaboration, and cooperation between stakeholders. The Project will

also strengthen the potential for scaling-up: The public financing of buildings construction will continue after the Project exit and therefore it's essential that in the final years of the Project implementation, the Government is assisted in adopting other 10-year buildings construction program fully in line with the new building codes and the MRV and enforcement institutional structure. The successful demonstrations of such NZEB projects can also be scaled up by interested private sector entities (in business centers and malls across the country).

As indicated above, the project concept aligns with the STAP guidance (GEF/STAP/C.56/Inf.04) on achieving sustainable outcomes, including the following approaches:

- Designing multi-stakeholder processes to engage key stakeholders, build stakeholder trust and motivation, and incentivize core actors for creating a climate-resilient and sustainable construction sector,
- Outlining a theory of change that recognizes the need for adaptability and resilience and emphasizes diversity and adaptive learning.

Catalytic Role: Potential for Replication and Scaling-up

With the testing of new and innovative buildings designs and thermal rehabilitation and climate-proofing methods, in the target pilot district, the project will provide the basis for learning and continuous replication throughout the nation. For example, more stringent requirements could be designed for construction materials procured and for related non-buildings measurement technologies such as automated/remote-metering and software requirements for electric grids, water and heat utilities. It's expected that CO2 emissions reductions from the public and residential buildings sector (which average 20 million tons of CO2 p.a.) will be reduced by 0.2% p.a. Considering the fact that construction sector has been and remains a key driving force for economic development of the country, a demonstration of energy saving potential of the project interventions in the building sector is expected to have full government support to facilitate the introduction and further wide-scale adoption of modern EE standards in newly built public and residential buildings. Furthermore, accounting for about one fifth of the country's total GHG emissions (18%), the housing sector has been identified in the National Strategy on Climate Change and the Nationally Determined Contributions (NDC) of the country as one of the priority sectors (along with oil and gas), where appropriate mitigation measures can help to reduce the country's carbon footprint and make housing more sustainable. GHG emission reduction measures in housing and building sectors are seen by the Government as low-hanging fruits in fulfilment of its obligations towards Paris Agreement by 2030, while providing sufficient time for planning and implementation of long-term concrete measures to reduce the carbon footprint of large income generating oil and gas sectors. The project's EE solutions and results to be tested in the Ahal City mega project, will therefore have Government buy-in and significant potential for replication and scaling up in the next mega project, a building of Ashgabat City residential complex with multiple administrative, public and residential buildings as well as large-scale urban planning campaign deployed throughout the country.

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

Please refer to Annex A.

Annex A – Project Map



Fig. 2. Administrative divisions of Turkmenistan. Source: Ministry of Foreign Affairs of Turkmenistan, 2014.

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Indigenous Peoples and Local Communities No

Civil Society Organizations Yes

Private Sector Entities

If none of the above, please explain why:

Select the stakeholders that have participated in consultations during the project identification phase:

- Government agencies

- Business associations of builders and materials suppliers

- Local Communities in the Project location

The PIF was developed based on consultations with national government stakeholders, local communities, and business associations whose members routinely benefit from the demand for construction-related work, services, and materials supply. The project is confirmed to be based on key national policies and strategies. The project will be developed in full consultation with a broad range of stakeholders in Turkmenistan through visits and consultation events. During the PPG process, detailed stakeholder consultations will be organized at the national and city levels. The PPG process will include not just meetings/visits, but also extensive stocktaking and validation stakeholder consultations with relevant government counterparts, and representatives of the private construction and vendor sector and a professional expert community to ensure the project is structured in a way that aligns with and supports national development priorities and addresses key barriers at all levels. The project will also consult with utilities (supply-side) and demand-side users to collect detailed and specific data about their needs, bottlenecks, resource use, and critical development issues. At the start of the project preparation process, the project development team will hold a series of introductory workshops to present the general concept to the stakeholders and receive initial feedback. Additional inputs will be collected on a one-on-one basis throughout the preparation period. The project preparation team will then hold a project validation workshop toward the end of the preparation process to present the final draft project framework to all stakeholders, and receive any further final feedback, which will then be incorporated in the final project design. During these consultations, the roles and responsibilities of key stakeholders and the specific mechanisms and strategies for their direct involvement in project activities will be identified. Considerations of participation and gender empowerment in the formulation of activities will be a key focus area, while gender mainstreaming tools will be applied in the development of technical guidelines for the integration of sustainable land management into planning processes. The project will ensure that both men and women are able to participate meaningfully and equitably, have equitable access to project resources, and receive equal social and economic benefits. Key institutions consulted in the development of this Project include Ministry of Agriculture and Environmental Protection, Ministry of Construction and Architecture, Ministry of Energy, Ministry of Education's Turkmen State Architecture and Construction Institute, Union of Entrepreneurs of Turkmenistan (national and regional affiliates), and Ahal Province Municipality.

The stakeholders mentioned above have agreed to make the following investments:

The following division of investment volume by stakeholders by expected:

Output 1.1 Investment in energy efficiency and energy savings measures in two public multi-family residential buildings of 9,532 sq.m. (Ministry of Construction and Architecture, \$10,000,000)

Output 1.2. Investment in the energy management systems (EMIS) and related IT technologies in two pilot residential buildings and one public building (Ministry of Energy, \$640,000)

Output 1.3 Design of a 10-year public investment program (valued at \$20 million for years 2026-2035) for new constructions under new building codes (Ministry of Construction and Architecture , \$700,000).

Output 2.2 Country-specific design criteria and standards are developed (Ministry of Construction and Architecture, \$2,000,000).

Output 2.3 An enforcement policy and associated legislations on Turkmenistan's building code are developed, (Ministry of Construction and Architecture, \$3,680,000).

Output 2.4 An institutional mechanism to regularly revise and update building energy performance standards is set up (Ministry of Construction and Architecture, \$4,080,675).

Output 3.1 The capacity of central and local government officials, and administrations is increased to conduct feasibility studies and to properly budget for compliant new buildings (Ministry of Construction and Architecture, \$1,000,000; Ministry of Energy, \$1,000,000)

Output 3.2 Life-cycle-cost assessment methodologies are introduced and operationalized within the budget planning procedures of the relevant governmental organizations and their subsidiary design bureaus (Ministry of Construction and Architecture, \$2,000,000)

Output 3.3 Monitoring, reporting, and verification activities are institutionalized as part of a dedicated divisions of the relevant governmental organizations (Ministry of Energy, \$1,000,000)

Output 3.5 Knowledge of the building users on the new energy efficient technologies in buildings is improved (Ministry of Agriculture and Environmental Protection and Ministry of Energy, \$1,098,864)

No indigenous peoples are expected to be affected by the project. During the development of the project considerations around local people and how the project might affect them has been assessed with the Government of Turkmenistan providing inputs and due diligence. In addition to that, during the project design period, UNDPs social and environmental procedures will be implemented by a dedicated consultant to produce comprehensive assessments. The project design team will liaise with local NGOs during the design period too to assess the need for any project interventions and to come up with dedicated SES plans.

The Turkmen State Institute of Architecture and Construction (established in 1963 as a Turmen Polytecnic) will play a key role in future engagement with all project stakeholders post-project. A stakeholders' consultation workshop will be held on its premises to discuss the proposed Work Plan, discuss the roles, and define future responsibilities of the regulatory bodies. The workshop will be used as an opportunity to promote a permanent intra-ministerial Working Group and proper representation of relevant stakeholders, including women-experts.

The Working Group will include experts assigned by the involved ministries and their departments/institutions and as covering staff salaries and supporting the operation of the Working Group with technical knowledge and expertise.

The Turkmen State Institute of Architecture and Construction is expected to trigger future learning opportunities and partnerships with academia. It will serve as a focal point for Government, private sector, and the public, as well as being part of a learning institution.

With the integration of the Institute – as a key player in the project exit strategy – will be transformed from being an output required at project end to an integrated aspect of project implementation and success. The embedded assumption in this aspect of project strategy is that involving the Institute in the project while the work of the international consultants will be ongoing will allow its staff to grow into the role required of them, as opposed to the model in which the implementing partner is solely accountable for results until the point of "handing over" to national parties. This will send a positive message to the Government that the success of this UNDP-GEF project intersects with the successful collaboration between academia, public and private stakeholders overseeing all critical issues related to updating of the EE framework and enforcing it with the builders.

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

Gender considerations will be fully mainstreamed into project implementation. Rapidly expanding towns and cities have created employment for many youths and women. Yet, in the construction sector, more women than men find it difficult to access employment. Women continue to be discriminated in relation to jobs and pay, promotion and security benefits, capacity building and skills development and are subjected to poor occupational health and safety standards. While in other industries, many women have been employed in semi-skilled or skilled jobs, in the construction industry, women are often employed as unskilled laborers. The job of an unskilled worker is more strenuous in the construction industry than in other manufacturing industries. However, difficult work is often assigned to women not because of their physical capacities as compared to men but on the ground of socially assigned roles. Women also show less eagerness to break the traditional ethics that suppress forms of employment that are "alternative" to the traditional roles.

Human development is a process of enlarging the choices for all people not just for one part of society such a process becomes unjust and discriminatory, if most women are excluded from its benefits. Existing sexual stratification in the construction labor market will not go away unless women gain more formal training in such areas as engineering and mechanization. In Turkmenistan, vocational training shows that the share of female students in all technical training facilities seems to be less than a third. Gender discrimination does not start at the point of entry into labor market but is to a large extent pre-determined through unequal division of labor within the home and choices made in education and training systems. The major challenge is the lack of needed skills and therefore the majority of women are condemned to unskilled workers/ laborers classification. Often, where men and women enter the construction work at the same time, over half of the women will remain as casual workers while only a relatively small fraction of the men remain in that category. It could be alleged therefore that men have more staff development opportunities than women or that half-baked men can easily be promoted to higher positions compared to women. The rigid gender division of labor confines women to a narrower range of income-earning or employment opportunities in the construction industry.

The Project will work with the Ministry of Agriculture and Environmental Protection and the Ministry of Construction and Architecture to ensure that big numbers of women are imparted with skills useful to the nascent sector of energy efficient rehabilitation of the buildings sector. Increased participation of women in the sector will support meaningful employment opportunities for women reducing the extent of and intensity of unemployment and poverty. The project will also provide opportunities for women to participate in the design of nearly zero-energy use buildings as well as in the production, supply, delivery, and administration of installation of energy-efficient technologies. Women will also gain access to capacity building and training, required to understand avenues of participation in the procurement of energy-efficient goods and services. The project will ensure that the gender balance is maintained in all project activities (e.g. seminars, city-level events). Moreover, gender considerations will inform community-level project activities linked to maintaining newly built infrastructure through consultation regarding needs and preferences on types of training and long-term roles. The project will also gather gender-disaggregated data for evaluation purposes and use gender-sensitive indicators (particularly around beneficiaries) to facilitate planning, implementation, and monitoring. Implementation strategies to deliver these targets will be designed and delivered by the project team in conjunction with key project partners. This will be done through the clear setting of targets in project agreements, payment by results and regular monitoring of progress.

The Project's Gender Action Plan will be prepared to:

- Encourage national partners to ensure women's participation and their equal and active participation ensured in all project-related events including consultation processes, workshops and informative events, at the level of at least 30% of total participants, with a special focus on young women professionals in the field of engineering, including university students and academics. This includes primarily the awareness-raising activities regarding construction and retrofitting of buildings, as well as end-users of electricity in buildings, on EE regulation and best practices.
- Ensure women's representation within the staff of all working groups and workshops to be provided with adequate technical training to meet job requirements.
- Ensure equal representation for men and women in activities related to capacity development in building codes & standards and technical knowledge in the EE buildings sector

In addition, whenever possible, data collected throughout the duration of the project should be disaggregated by age and gender, including participants in events and project activities as well as monitoring and evaluation of the developed knowledge management framework on EE in the building sector in Ashgabat and Turkmenistan. Further to that, the capacity of all stakeholders including the project team and government partners will be increased on gender

equality as part of the gender action plan.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes

closing gender gaps in access to and control over natural resources;

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women. Yes

Will the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

There were over 8,000 domestic private enterprises active in Turkmenistan in 2016. They employed 124,000 persons and had revenues equivalent to 15.2% of GDP. Most of them were active in the agriculture, construction, and manufacturing sectors. About 80% were microenterprises, and only 11% were small enterprises. Construction relies heavily on public procurement and public financing, which is the area targeted by the Project. Lack of information on the new requirements applied to the quality of goods and types of materials and equipment to be in demand threatens to become a major impediment to private sector growth in the construction sector particularly in light of the mainstreaming of such energy efficiency projects going forward on the national level. This includes both the production side (represented by producers of insulation materials and glass), the service sector (represented by providers of installation and maintenance services), and the building side (represented by companies providing qualified labor). There has been considerable investment in the production of energy-efficient windows nationwide but these production facilities now will have to be upgraded to adapt to more stringent energy efficiency requirements. Similarly, vendors of insulation materials or metering equipment will have to adapt to new requirements by choosing alternative suppliers and familiarize with related software products. The Project will assist them in all these adjustment needs, including the provision of trainings (Output 3.4 to assist business owners in spotting public procurement opportunities for the supply of IT equipment, and materials as well as installation and maintenance services. For this purpose, the Project will work with relevant industry associations and the largest international equipment producers to identify the largest of such businesses.

A real investment from the nascent domestic private sector, mostly comprised of small and medium scale enterprises, in the supply or installation of the technology in the pilot buildings may not be expected at this stage. The infrastructure sector (including buildings but also encompassing such facilities as roads, ports, railways, or street lighting) still lacks normative frameworks providing for the return on private investment into energy efficiency technologies from the energy savings delivered to public facility owners or private residents of the public property. However, in the course of implementation, the project will work with the national partners to look at potential opportunities to attract private sector investment, including from large-scale international construction companies, such as Bouygues, Vinci, Gap Insaat and Calik Energy, active in the country, in the project proposed EE technologies and practical solutions.

5. Risks to Achieving Project Objectives

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

The below risk matrix summarizes the expected risks and mitigation measures. During the PPG phase a more detailed risk assessment will be undertaken. This will include detailed analysis on social and environmental safeguards, COVID-19 related risks and opportunities, and climate change vulnerability assessment.

The Project is particularly relevant to the COVID-19 pandemic as it addresses the need for resilience-building strategies to accommodate the extended durations which people are now spending inside their households. It provides an opportunity to showcase initiatives with significant potential to generate global environmental benefits and encourages parallel planning for green recovery, including energy access, efficiency and sustainability. In this sense, such aspects of EE in buildings as thermal insulation provide several advantages such as a better indoor climate and reduced electricity consumption. These advantages have become more impactful during the COVID-19 pandemic, where the difference between a household with stable and reliable access to electricity and one that doesn't directly translate to higher potential for education, work opportunities and health protection through self-isolation. Reduced electricity consumption has a five-fold benefit: reduced cost to the user; reduced operational cost to the public utility because of reduced demand; reduced capital costs to the utility because the reduced growth in loads requires less infrastructure development; reduced pollution as a result of power generation; and reduced environmental impact due to extended product lifetime. The project will ensure that the adoption of updated building codes is adequate to the continuity of COVID-19 risks and the eruption of similar risks in the future.

COVID-19 pandemic has also emphasized the need to prioritize gender equality. The impacts of COVID-19 have been exacerbated for women and girls via increased job insecurity and resulting lower savings (and lower earnings) for females, which means females have struggled from the effects of the pandemic more than males. With children out of school and health services overwhelmed, women have been less able to partake in the formal employment sector carrying the brunt of the unpaid care work at home.

Climate change risks and vulnerabilities during the project implementation will be assessed and elaborated during the PPG, with the design team making a climate vulnerability analysis based on STAP guidance. Climate risks might affect the implementation of the projects due to prolonged period of extreme heat in summer time when no installation work might be undertaken due to hostile working conditions for manual labor in an unconditioned environment. The key aspects of the climate change projects/scenarios at the project location indicate that many of the climate change impacts which are already evident includes rising temperatures, intensifying droughts, declining precipitation, increasing salinization, and the heightening prevalence of dust storms. Observed changes in Turkmenistan's climate are well established. Averaged over the 1950-2010 period, average temperatures have been increasing at a rate of about 0.7°C per century. Over the same period, average rainfall in the southern part of the country (where Ashgabat is located) has been decreasing while the number of rainy days has also been decreasing (in 2021, rainfall dropped to as low as 17% of the average annual value). The frequency of dust and sandstorms has also been increasing across Turkmenistan suggesting that within the next ten years Turkmenistan could witness more sand dust storms per year due to climatic changes within the region, especially decreases in annual rainfall, as well as the drying of marshland areas. Recurrent drought is also common throughout Turkmenistan and has produced enormous economic, environmental, and social impacts.

Description Identified Risks and Category	Risk category	Likelihood & Impact	Risk Mitigation Measures
Lack of technical, financial and administrative capacities of the Implementing Partners to execute d	Operational	L= 4, I=4 (Substantial	UNDP will engage third responsible party (RP) in project implementation, agreed with the the Ministry of Agriculture and Environmental Protection and Ministry of Construction and Architecture. The RP will be responsible for Project planning, coordination, management, monitoring

ing partners to execute donor funded projects.		(substantial)	responsible for project planning, coordination, management, monitoring, evaluation and reporting. In addition, Private Sector Risk Assessment will be conducted during Year 1 as may be required in accordance with the UNDP Guidelines. Moreover, all procurement to be done under this component will follow a competitive and transparent bidding and selection process. Supplier contracts shall include clauses for performance monitoring, servicing and training of relevant EEC staff. The preparation of the RFP requirements and the subsequent review and assessment of the proposals will include a third-party expert to verify that the costs do not exceed the incremental costs of the standard prices in the market that have the similar technical specifications.
Lack of co-financing for new-builds and buildings rehabilitation beyond the two pilot buildings financed by the Project.	Financial	L=2, I=4 (Moderate)	The project will not disburse any funds until the feasibility studies (to be produced at the initial phase of the Project work) are not assessed by the Government and their conclusions as regards changing the outdated regulations are given the green light. The Project will also develop a phased investment plan that will be starting from no earlier than Year 3 to ensure project financing can be stopped at any moment in case progress on the co-financing front will not be forthcoming.
The Government doesn't pass legislation during the time-frame of the project.	Organizational	L=2, I=4 (Moderate)	The project will initiate the drafting work in Year 2 and will make it known to the Government that the investment will only be available in Year 3 and Year 4 and only in case new laws are fully enacted and transposed to all bylaws prior to any investment to be made. This will ensure that all parties are aware of and understand the relevant obligations and rights.
The staff turnover at national and local government institutions is so high that the built capacity is lost faster than it can be replenished while there's no funding for replenishment of the lost capacity beyond the end of the project.	Organizational	L=3, I=3 (Moderate)	The Project will ensure that the training of trainers is initiated early on. It will also develop an institutional sustainability plan to ensure that the different project investments in building the capacity of the targeted institutions are maintained (and scaled-up, if feasible and affordable) beyond the timelines of the Project. The Project will also ensure that the Government allocates required funds for procurement of the training activities in their annual institutional administrative budget to ensure the staff is continuously trained after the cessation of project activities.
Continued Covid-19-related travel restrictions might make it difficult for international experts to engage via video-conferencing platforms and that utilized the largest vacated conferen	Operational	L=4, I=3 (Moderate)	The Project will utilize lessons learned by other ongoing projects that have been able to successfully engage international experts via video-conferencing platforms and that utilized the largest vacated conferen

ernational experts to travel to the region and for business owners to joint trainings and reach-out events.

ce facilities to enable relatively large groups of trainees to be placed under one roof with safe spacing and protective gear. This risk will be further elaborated during the PPG phase. A Threat and Opportunity analysis will be prepared then. The detailed Procurement Plan for retrofitting both buildings will be developed during Year 1 of project implementation. The Procurement Plan will take into account the risks associated to COVID-19 and the potential impacts on the mobility of people and equipment, and shall seek to obtain all products from local suppliers and provide material available in the domestic markets, as possible.

The implementation of activities will at all times take into account social distancing recommendations and prioritize the health and safety of trainers and participants in the choice of venue and maximum capacity for attendees. Hence, while training sessions would typically include 25-30 participants, possibly smaller numbers for technical training, the UNDP CO as the project's implementing partner will be open to adding more training rounds as may be needed, in order to reduce the number of participants per round as appropriate to the training venue. On-line meetings and virtual events will also be utilized to replace in-person meetings whenever possible to reduce the risks associated to COVID-19 on the project's progress and timeline. This will also help hedge the risks of continued or resumed travel bans and visa restrictions to foreign experts travelling to Ashgabat for training purposes or personal meetings. The project will at all times follow UN regulations in terms of social distancing and travel restrictions, abiding by WHO guidelines for preventive measures.

One of the ways in which the Project will address limitations to the size of in-person meetings is that it will fully utilize virtual activities whenever possible, including online consultation meetings and capacity building workshops. Furthermore, the project approach to knowledge sharing is to create an online platform. The reliance on remote knowledge dissemination serves to expand the reach out, but also to ensure continuity during pandemic crises without putting the different target groups at exposure risks.

The project budget also allocated fees for national consultants to support international consultants on all components. This strategy aims to engage national experts in project implementation to ensure its sus

			<p>engage national experts in project implementation to ensure the sustainability, but also to ensure continuity and enhance the ability of the project team to maintain the workflow whether the international consultants were able to conduct field missions or carried home-based assignments to comply with travel restrictions in their home countries and/or in Turkmenistan.</p> <p>Part of ensuring the sustainability of project activities and prolonging its impact beyond the project duration is to maintain a system of monitoring, evaluation, knowledge sharing, and knowledge dissemination. The sustainability of these systems requires the ability to maintain uninterrupted operation during COVID-19. Hence, it is proposed that the Knowledge Management (KM) system takes the form of an online portal, reducing in-person contact and ensuring the work can proceed in case there continues to be restrictions on mobility during project implementation. The information contributing to knowledge production should be collected in an organized manner and constantly feeding the design of new interventions. The outcomes under this component serve to ensure that knowledge management, monitoring and evaluation are accounted for as independent tasks, but also integrated in all aspect of project implementation.</p> <p>Additional mitigation measures will be integrated in the project strategy to ensure that procurement of material and goods for retrofitting activities will consist of locally available products, unless otherwise advised by the consultants and contractors.</p> <p>Producing opportunities for participation of women-led businesses and women experts in the project planning and implementation will help bridge the gender impact gap of the COVID-19 pandemic.</p>
Climate change's possible impact to project.	Environmental	L=3, I=3 (Moderate)	<p>Climate change risks and vulnerabilities during the project implementation will be assessed and elaborated during the PPG, with the design team making a climate vulnerability analysis based on STAP guidance.</p> <p>Climate risks might affect the implementation of the projects due to prolonged period of extreme heat in summer time when no installation work might be undertaken due to hostile working conditions for manual labor in an unconditioned environment.</p> <p>The climate change impact on the project is assessed to be moderate</p>

			<p>The climate change impact on the project is assessed to be moderate during the project lifetime (Moderate risk - Impact from climate change may occur, but will be limited, transient or manageable). Financial, environmental and social underperformance or failure is unlikely. The Project has the capacity to manage volatility, shocks, stressors or changing climate trends.</p>
<p>Increases of greenhouse gas emissions or other drivers of climate change due to increased energy density of dwellings in newly built complexes.</p>	<p>Environmental</p>	<p>L=1, I=3 (Moderate)</p>	<p>Due to the higher energy efficiency of the residential buildings, residents will spend less money on energy to heat and cool their apartments and may spend the freed resources on purchasing additional energy consumers, such as larger refrigerators or more powerful indoor lighting devices.</p> <p>Such risks of oversized consumer appliances will be addressed by the Project Team during training sessions with residents and via information campaigns in the media and on-site information boards.</p>
<p>Inequitable or discriminatory distribution of rights to reside in energy efficient dwellings to people excluding those living in poverty or other marginalized i.e. excluded individuals or groups.</p>	<p>Social</p>	<p>L=2, I=2 (Low)</p>	<p>In assigning families and individuals to newly built and more energy efficient buildings the Government is being guided both by the current sq. footage availability per a household member and an institutional link (i.e. by whether rehoused individuals are employed by the agency/ministry sponsoring the construction of a particular block of flats). Poorer families have an equal chance to be relocated subject to them having a work affiliation (via employment of a family member), particularly if they hail from more crowded households.</p> <p>Although the Project does not partake in the selection of residents for rehousing, it will aim to collect socio-economic data on all residents rehoused to benchmark their socio-economic standing against available national and international benchmarks and discuss the findings with the project partners to ensure non-discriminatory/equitable rehousing practices.</p>

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

This project will be implemented within the context of the UN programming frameworks driven by the Government, particularly the UN Sustainable Development Cooperation Framework (UNSDCF) for Turkmenistan, and the UNDP Country Programme Document for Turkmenistan for 2021-2025 (CPD). In turn, these frameworks are congruent with the Government priorities outlined in the National Programme “The Strategy of Economic, Political, and Cultural Development of Turkmenistan Until 2030” and adopted Programme of Social and Economic Development of Turkmenistan for 2019-2025.

As the GEF Agency for this project, the UNDP Turkmenistan will provide quality assurance, in accordance with the requirements of the GEF and UNDP Policies and Procedures. Most of UNDP’s work for the project will be based in its Country Office in Ashgabat, under the supervision of the Programme Specialist for Resilience, Environment and Energy and other senior programme staff, including the UNDP Resident Representative, Deputy Resident Representative and Assistant Resident Representative as warranted. UNDP will also engage contractors to carry out Mid-term and Final Evaluations of the project. The UNDP Regional Team Leader, Regional Technical Advisor and Regional Programme Associate, based in the UNDP Istanbul Regional Hub, as well as Principle Technical Advisor based in the Headquarters, will provide technical support in terms of project cycle management and oversight support, to ensure consistency with expectations from UNDP and GEF.

National Executing Partner: The Ministry of Agriculture and Environmental Protection (MAEP) and the Ministry of Construction and Architecture (as a secondary executing partner) are the government institution responsible for the implementation of the project and will act as the Executing Agency, in accordance with the UNDP national implementation modality (NIM), implying full national ownership of the project in Turkmenistan. This is in line with the Standard Basic Assistance Agreement (SBAA, 1993) and the UN Sustainable Development Cooperation Framework (UNSDCF) 2021-2025 between the UN and the Government of Turkmenistan. The Ministry of Agriculture and Environmental Protection will be responsible for the overall coordination of project implementation, efficient use of project resources and achievement of the planned project objectives, while the Ministry of Construction and Architecture will be responsible for the project implementation on technical and field levels. However, considering the limitations in technical, financial and administrative capacities of the national ministries in Turkmenistan, UNDP will engage third parties (responsible parties (RP) in UNDP terminology) in project implementation, agreed with the Ministry of Agriculture and Environmental Protection and Ministry of Construction and Architecture. In line with the clarifications from the executing party, the government organizations are not capable of executing any of the project budgets as there are legislation-stipulated limitations with respect to receipt of cash transfers by national Turkmenistan government entities from international organizations, which do not allow budget execution by the Government. The government of Turkmenistan foresees involvement of a RP to the implementation of the project for Project planning, coordination, management, monitoring, evaluation and reporting. This includes providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results, as necessary.

Following GEF SEC’s guidance, the management arrangements for this PIF stage are currently formulated without UNDP execution support. These management arrangements, including approaches to addressing domestic constraints on financial transactions in Turkmenistan, will however be further assessed at the PPG phase and presented to GEF SEC.

Project Implementation: The project organization structure will consist of a Project Board, Project Assurance, and Project Management Unit (PMU). Roles and responsibilities will be as described below.

Project Board: The Project Board (PB) will be responsible for making management decisions for the project, in particular when guidance is required by the Project Coordinator. It will play a critical role in project monitoring and evaluations by assuring the quality of these processes and associated products, and by using evaluations for improving performance, accountability, and learning. The PB will ensure that required resources are committed. It will also arbitrate on any conflicts within the project and negotiate solutions to any problems with external bodies. Based on the approved Annual Work Plan (AWP), the PB can also consider and approve the quarterly plans and approve any essential deviations from the original plans. The project will be subject to PB meetings at least twice every year. The first such meeting will be held within the first six months of the start of full implementation. At the initial stage of project implementation, the PB may, if deemed advantageous, wish to meet more frequently to build common understanding and to ensure that the project is initiated properly. To

ensure UNDP's ultimate accountability for project results, PB decisions will be made in accordance with standards that shall ensure management for development results, best value for money, fairness, integrity, transparency, and effective international competition. Members of the PB will consist of key national government and non-government agencies, and appropriate local level representatives. UNDP will also be represented on the PB, which will have appropriate representation in terms of gender. Potential members of the PB will be reviewed and recommended for approval during the Local Project Appraisal Committee (LPAC) meeting. In addition, PB meetings will be open to observer organizations, which can comment and provide input on project activities, and potential decisions, although only PB members will have decision-making powers. The PB will contain three distinct roles:

Executive Role: This individual will represent the project "owners" and will chair the group. It is expected that the Ministry of Agriculture and Environmental Protection will appoint a senior official to this role who will ensure full government support of the project.

Senior Supplier Role: This requires the representation of the interests of the funding parties for specific cost sharing projects and/or technical expertise to the project. The Senior Supplier's primary function within the PB will be to provide guidance regarding the technical feasibility of the project. This role will rest with UNDP Turkmenistan represented by the Resident Representative.

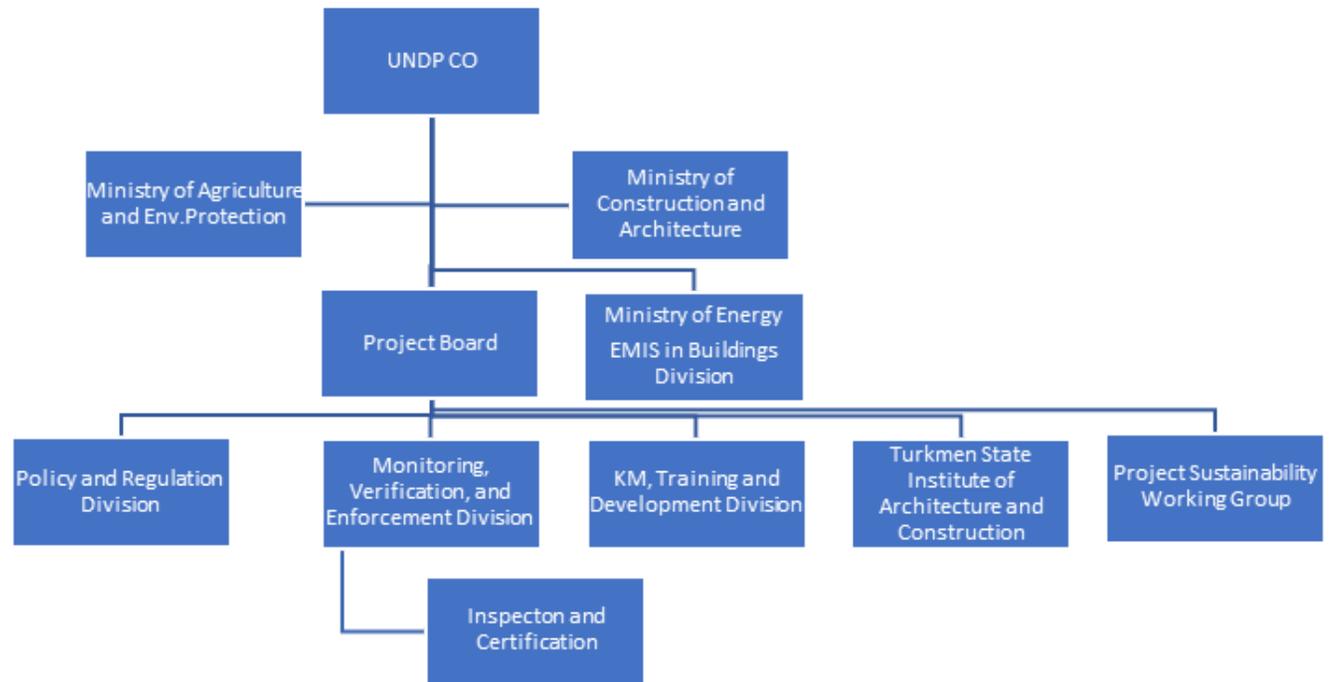
Senior Beneficiary Role: This role requires representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the PB will be to ensure the realization of project results from the perspective of project beneficiaries. This role will rest with the other institutions (key national governmental and non-governmental agencies, and appropriate local level representatives) represented on the PB, who are stakeholders in the project.

Project Assurance: The Project Assurance role supports the PB Executive role by carrying out objective and independent project oversight and monitoring functions. The Project Assurance role will rest with the Programme and Policy Analyst in charge of Environment/Energy and Disaster Risk Management of UNDP Turkmenistan, and its Programme Oversight and Support Unit (POSU.)

National Project Management (PMU) Unit: The day-to-day administration will be carried out by a Project Manager (PM) and Project Technical Field Assistant (PTFA), who will be located within the offices of the Ministry of Construction. The PTFA will be supporting the PM in running activities in the project field areas and providing relevant support. The Project Implementation Unit (PIU), located at UNDP premises, will provide financial and administrative support to the project implementation. As per Government requests, the staff will be recruited using standard UNDP recruitment procedures. The PM will, with the support of the PA and PIU, manage the implementation of all activities, including: preparation/updates of work and budget plans, record keeping, accounting and reporting; drafting of terms of reference, technical specifications and other documents as necessary; identification, proposal of consultants to be approved by the PB, coordination and supervision of consultants and suppliers; organization of duty travel, seminars, public outreach activities and other events; and maintaining working contacts with partners at the central and local levels. The Project Manager will liaise and work closely with all partner institutions to link the project with complementary national programs and initiatives. The PM is accountable to UNDP and to the Ministry of Agriculture and Environmental Protection and the PB for the quality, timeliness and effectiveness of the activities carried out, as well as for the use of funds. The PM will produce Annual Work and Budget Plans (AWP&ABP). The PM will further produce quarterly operational reports and annual Project Implementation Reports (PIR). These reports will summarize the progress made versus the expected results, explain any significant variances, detail the necessary adjustments and be the main reporting mechanism for monitoring activities. The PM will be technically supported by contracted national and international service providers, based on need as determined by the PM and approved by the PB. Recruitment of specialist services will be done by the PM, in consultation with the UNDP and the Ministry of Agriculture and Environmental Protection and in accordance with UNDP's rules and regulations.

To mainstream UNDP Turkmenistan's publicity at the local and national level, the project will provide information and communication support to all projects and initiatives implemented in Turkmenistan through its support staff, which will include Project Communication/PR Specialists. The project, based on the need, will also hire long and short-term local and international experts. In-depth ToRs for the project posts will be drafted by UNDP to outline the duties and functions of project personnel in more detail, and hires for both the principal staff and project experts will be conducted in line with UNDP rules and procedures.

The following figure presents a proposed organizational structure for the Project, to be updated during the PPG phase and implementation:



Coordination with other projects

Implementation of the proposed project will be fully coordinated with a number of on-going relevant multilateral and bilateral financed initiatives, in order to avoid duplication and increase synergies and effectiveness. The proposed project will build on successful practices and lessons learned from the completed UNDP-GEF project “Improving Energy Efficiency in the Residential Buildings Sector of Turkmenistan (2010-2017)”. This project aimed to reduce greenhouse gases (GHG) emissions by improving energy management and reducing energy consumption in the residential building sector of Turkmenistan through: (i) “Soft measures” (revising legal & regulatory framework so as to include in them energy efficiency concerns); and (ii) “strategic approach”, which included facilitation continued growth in EE buildings programs by awareness and capacity building measures, including with demand-side management partnership with Turkmengas – the main gas grids operator.

One of the lessons learned by the 2010-2017 Energy Efficiency in the Residential Buildings Sector of Turkmenistan project was that for any energy efficiency project to be successful, it has to reach beyond space heating (including in its regulatory upgrade assistance work) to address cooling, lighting, and hot water provision because of their significant roles in residential energy consumption.

Another lesson learned by the Government was that for a GEF-financed to be successful it focus on designing a wide array of legislative acts to institutionalize the piloted initiatives such as was the case of the Sustainable Cities project (Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Avaza, GEF Project ID # 9279; UNDP PIMS # 5452, 2018-2024). The Sustainable Cities project helped the Government to develop the National Strategy of Turkmenistan on Development the Renewable Energy till 2030 (approved by the Decree of the President of Turkmenistan on December 4, 2020), Law of Turkmenistan “On Renewable Energy Sources (adopted by the Parliament on March 13, 2021), and a draft Law of Turkmenistan “On Energy Efficiency” (under the discussion in the Parliament).

The proposed project will have over \$28 million of committed co-financing funds to spend on the procurement of equipment that is in line with the vector set in the draft laws, such as stimulation of off-the-grid electricity generation and integration of this energy into the national grid (as will be the case with an excessive generation capacity of solar panels on the pilot buildings).

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions?

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

- UNCCD Reporting
- National Strategy of Turkmenistan on Climate Change
- Nationally Determined Contributions (NDC) of Turkmenistan

The project is highly relevant to and consistent with Turkmenistan's national priorities related to energy efficiency as outlined in key national policy documents. The National Climate Change Strategy of Turkmenistan considers Energy Efficiency and energy saving and the increased use of alternative energy sources as the main priorities of the policy-oriented towards reduction of GHG emissions. According to the Strategy, priorities for developing the housing and municipal services sector among others include, improving the performance efficiency of the municipal heating supply system, improving the regulatory framework for construction standards and rules towards ensuring energy efficiency and heating supply security of buildings and promoting public awareness and motivation activities towards more resource-saving and sustainable lifestyles. The Nationally Determined Contributions (NDC) of the country to be adopted in early 2022 also identifies the housing sector as one of the priority sectors for GHG emission reduction until 2030.

A relatively low-cost implementation of the proposed NZEB residential buildings investment program (i.e. a projected 1-3% increase in the incremental capital expenditure relative to baseline buildings construction costs) and the program's well-planned country-wide roll-out are expected to trigger interest on the part of the President (in charge of central budget planning) to expand the application of NZEB provisions of the updated building codes to most other types of large (over 5,000 sq.m. of area) buildings therefore impacting a large chunk of energy consumers (public and residential buildings represent 29% of all final energy consumption in Turkmenistan).

8. Knowledge Management

Outline the knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

The project has multiple elements that will contribute to the knowledge management approach. Each project output will include the documentation of lessons learned from the implementation of activities under the output, and a collation of the tools and templates (and any other materials) developed during implementation. The Project Manager will ensure the collation of all the project experiences and information. This knowledge database will then be made accessible to different stakeholder groups in order to support better future decision-making processes in mainstreaming biodiversity and sustainable land management in Turkmenistan and more consistent adoption of best practices. The project will also disseminate information through relevant websites such as government ministry websites and the UNDP Country Office website, and produce and distribute quarterly updates to stakeholders, in order to further facilitate the dissemination of this information. The project will build on partnerships at the national and city levels, and with such national and regional structures as the Union of Entrepreneurs and the research community. This may include various construction research institutes and universities (mostly operating under the auspices of the Ministry of Construction and Architecture), which have regional affiliates of varying capacity and quality. These institutions tend to have some level of technical knowledge with regards to construction standards and techniques. The project team will work with these entities in the development and dissemination of knowledge products, as well as through online systems. Developed learning materials will be transferred to the Ministry of Construction and Architecture as well as other partner institutions for further dissemination and updating. Results from the project will be disseminated within and beyond the project through existing information-sharing networks and forums. The project will identify and participate - as relevant and appropriate - in scientific, policy-based and/or any other networks, which may be of benefit to project implementation through lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. There will be a two-way flow of information between this project and other projects of a similar focus. A comprehensive review of relevant good practices and lessons relevant for the project design from similar projects in the Middle East and Central Asia (the most similar countries from the climatic point of view) will be undertaken during the PPG phase. The project will also generate new lessons and good practices, particularly in relation to passive buildings/NZEB design and financing, which will be shared broadly through regional communication channels and knowledge management platforms.

During the PPG phase, the project team led by an international expert will conduct a comprehensive review of existing best practices and lessons learnt on practicalities of EE technologies and solutions implemented in similar projects and initiatives in the region, which will inform the project document. Learning opportunities and technology transfer from peer countries will be further explored during project implementation via the South-south and triangular cooperation. A suitable knowledge management approach will be discussed and agreed with the key national partners during the PPG stage to develop and implement a long-term and detailed knowledge management and sharing strategy.

9. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF

CEO Endorsement/Approval MTR

TE

Medium/Moderate

Measures to address identified risks and impacts

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

Project Information

<i>Project Information</i>	
1. Project Title	Developing National Capacity of Turkmenistan through Improving Regulatory Environment towards Energy Efficient and Sustainable Building Sector
2. Project Number (i.e. Atlas project ID, PIMS+)	PIMS ID: 6692
3. Location (Global/Region/Country)	RBEC/Turkmenistan
4. Project stage (Design or Implementation)	Project Design/PIF
5. Date	April 11, 2022

Part A. Integrating Programming Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Programming Principles in Order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the project mainstreams the human rights-based approach

The project fully support's UNDP's commitment to a human-rights based approach, and supports the universal respect for, and observance of, human rights and fundamental freedoms for all, but particularly in the case of this project, for all urban citizens in new Administrative Centre of Ahal Province in Turkmenistan. The project does this broadly by supporting the effective and sustainable use of energy in housing sector, including development and adoption of energy efficient building codes and standards with long-term impact as well as by promotion of clean solar energy use. In addition, the project

option of energy efficient building codes and standards with long term impact as well as by promotion of clean solar energy use. In addition, the project will ensure and support the human rights principles of participation, inclusion and non-discrimination. More specifically, the project will carry out the following activities that support UNDP's human rights-based approach:

- Throughout all project activities the principles of participation and inclusion will be applied. In practical terms, this means, that all stakeholders will be consulted in planning the details of project activities for the project workplans. Stakeholder groups will be fully represented in the project steering committee, which will have oversight of the project, and provide strategic guidance on project implementation.
- In all aspects of the project, the project will ensure that residents in project pilot site have meaningful means of raising any concerns, to UNDP or to respective resource management authorities, including government institutions, that are involved in the project. During the project inception phase the project will specifically communicate to all stakeholders and participating communities the specific mechanism and means for raising concerns or grievances to UNDP or to government representatives when activities may adversely affect them.
- The project supports the equality aspect of human rights particularly through supporting the implementation of UNDP's gender mainstreaming policy, as further described in the following question of this SESP.

By promoting energy efficiency in construction sector, this project will lead to local social and economic growth and additional employment opportunities in the target province. The intended socioeconomic outcomes of the project – including a cleaner environment, reduced energy and utility costs – apply equally all urban citizens (more than 2.6 million people) of Turkmenistan in the longer term, equally and without discrimination with regard to income, gender, or other factors.

Briefly describe in the space below how the project is likely to improve gender equality and women's empowerment

Rapidly expanding towns and cities have created employment for a lot of youth, including women. Yet, in the construction sector, more women than men find it difficult to access employment. Women continue to be discriminated in relation to jobs and pay, promotion and security benefits, capacity building and skills development and are subjected to poor occupational health and safety standards. While in other industries, many women have been employed in semi-skilled or skilled jobs, in the construction industry, women are often employed as unskilled laborers. The job of an unskilled worker is more strenuous in the construction industry than in other manufacturing industries. However, difficult work is often assigned to women not because of their physical capacities as compared to men but on the ground of socially assigned roles. Women also show less eagerness to break the traditional ethics that suppress forms of employment that are "alternative" to the traditional roles.

The project will be developed fully in-line with and supportive of both the GEF's and UNDP's gender mainstreaming policies. A full gender analysis will be conducted during the PPG phase and based on this a project Gender Action Plan will be drafted. Appropriate information gathering and planning will be carried out during the project development involving key stakeholders and including women as much as possible in the local consultations and through the validation workshop. The Project will work with the Ministry of Agriculture and Environmental Protection and the Ministry of Construction and Architecture to ensure that a large number of women is imparted with skills useful to the nascent sector of energy efficient rehabilitation of the buildings sector. Increased participation of women in the sector will support meaningful employment opportunities for women reducing the extent of and intensity of unemployment and poverty.

The project will also provide opportunities for women to participate in the design of nearly zero-energy use buildings as well as in the production, supply, delivery, and administration of installation of energy efficient technologies. Women will also gain access the capacity building and training, required to understand avenues of participation in the procurement of energy efficient goods and services. The project will ensure that the gender balance is mai

to understand avenues of participation in the procurement of energy efficient goods and services. The project will ensure that the gender balance is maintained in all project activities (e.g. seminars, city-level events). Enforcement agency staff will be expanded by more women hires and will get health and safety (H&S) monitoring training in order to spot H&S violations at work-sites in terms of lack of appropriate protective conditions and gear.

Gender considerations will inform community level project activities linked to maintaining newly built infrastructure through consultation regarding needs and preferences on types of training and long-term roles. The project will also gather gender-disaggregated data for evaluation purposes and use gender sensitive indicators (particularly around beneficiaries) to facilitate planning, implementation, and monitoring. Implementation strategies to deliver these targets will be designed and delivered by the project team in conjunction with key project partners. This will be done through the clear setting of targets in project agreements, payment by results and regular monitoring of progress.

Briefly describe in the space below how the project mainstreams sustainability and resilience

The core focus of this project is environmental sustainability as it relates to reducing the scale of CO2 emissions from the buildings sector. The project seeks to mainstream best buildings design and construction practices at the level of national government, municipal administrations, and private construction businesses. It also has major activities focusing on raising awareness and creating behavioral change among buildings users.

The project design:

- Enhances sustainability of construction design of certain building types. This reduces vulnerability of the residents to extreme climate events that are anticipated to become more frequent in any of the climate change scenarios
- Supports strengthening of the building design capacity development at the national and local levels for critical buildings energy delivery and energy management (for energy monitoring, building code enforcement, etc.)
- Supports financial sustainability of the growing building stock.

Briefly describe in the space below how the project strengthens accountability to stakeholders

The project design:

- Supports meaningful participation and inclusion of all stakeholders, in particular marginalized individuals and groups, such as women, in the buildings design and maintenance process, which are high value-added activities with salaries that are close to or higher than median salaries producing more equitable distribution of benefits among women and creating an enabling environment for women's entry and participation in the sector (consistent with participation and inclusion human rights principle)
- Supports meaningful means for disenfranchised segments of the population to raise concerns and/or grievances about unfair labor practices and poor workplace conditions, including a redress processes when activities may adversely impact them (consistent with accountability and rule of law human rights principle).
- The project-affected people (staff of the design, construction and buildings maintenance subcontractors) will be informed of UNDP's Accountability Mechanism via seminars, targeted information campaigns and dedicated annexes to their employment contracts.

Part B. Identifying and Managing Social and Environmental Risks

<p>QUESTION 2: What are the Potential Social and Environmental Risks?</p> <p><i>Note: Complete SESP Attachment 1 before responding to Question 2.</i></p>	<p>QUESTION 3: What is the level of significance of the potential social and environmental risks?</p> <p><i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6.</i></p>			<p>QUESTION 6: Describe the assessment and management measures for each risk rated Moderate, Substantial or High.</p>
<p><i>Risk Description</i> <i>(broken down by event, cause, impact)</i></p>	<p><i>Impact and Likelihood (1-5)</i></p>	<p><i>Significance</i> <i>(Low, Moderate, Substantial, High)</i></p>	<p><i>Comments (optional)</i></p>	<p><i>Description of assessment and management measures for risks rated as Moderate, Substantial or High</i></p>
<p>Risk 1: Expansion of new construction creates occupational safety concerns, as well as issues of consumer protection for waste materials particularly when they contain hazardous wastes that is harmful to the environment and human health, if not properly managed and disposed.</p> <p>Standard 1: 1.1-1.7 Standard 8: 8.1-8.2-8.3</p>	<p>I=3 P=3</p>	<p>Moderate</p>	<p>The project's pilot activity on outfitting buildings with energy saving and measurement equipment will be relatively small in scale but will still pose occupational and environmental risks from transport of materials and operation of heavy equipment.</p>	<p>As with any infrastructure-related activities and risks, the quality of technical design is key. This design will explicitly include recommendations on mitigation of occupational and environmental risks. Such recommendations should include, but not necessarily be limited to the following:</p> <ul style="list-style-type: none"> · Provisions for a full occupational safety plan and training in advance of any construction, plus inspections in accordance with and possibly beyond existing national occupational health and safety regulations · Provisions to inform construction workers about what wastes are hazardous and therefore should be handled separately from other waste streams. <p>This risk might occur in relation to implementation of the Component 1 – Output 1.1 and 1.2, which directly implements energy efficiency measures for the buildings and in Output 1.3 which is related to trainings and capacity</p>

				<p>y building.</p> <p>An Environmental and Social Management Plan will be prepared during the project implementation, as a requirement, prior to start of any civil works, giving details for administering and monitoring the potential environmental and social impacts and their mitigation measures, including with respect to this risk. ESMP will include planning (but not limited to) adequate waste management plan, hazardous materials management and disposal etc. During building design process (implementation stage), the characteristics of each building will be assessed to identify the possible hazardous materials, as need be.</p> <p>A Grievance Redress Mechanism (GRM) will be developed at the funding proposal stage and operationalized during the first year of implementation to mitigate/resolve any complaints as part of the waste management plan. This risk shall be also accounted for in the Stakeholder Engagement plan that will be drafted at the design stage and updated, as need be during the implementation, to ensure appropriate communication about the mitigation/management of the risk among the relevant project beneficiaries and stakeholders.</p>
<p>Risk 2: Risks related to occupational health and safety during the renovation works and that the employment opportunities provided by the project may fail to comply with national and international labor standards</p> <p>Standard 7</p>	<p>I = 4 L = 2</p>	<p>Moderate</p>	<p>This risk is not fundamentally different from the risks associated with any other ongoing construction works, but in any case, should be properly monitored and managed during the project implementation stage.</p>	<p>This risk is primarily applicable to the Output 1.1-1.2, where construction work is expected but also to all other project activities as they shall all be promoting/mainstreaming health, safety and high environmental standards. At the project design stage, this will be addressed in the Environmental and Social Management Framework (ESMF). Procedures will be put in place through the ESMPs during the implementation phase, to avoid the working conditions not meeting the national labor laws and international commitments. and in denial of freedom of</p>

				<p>association and collective bargaining, use of child labor, forced labor to discrimination against women considering that construction activities are dominated by men labor.</p> <p>-</p> <p>In concrete terms, ESMP shall also include an Occupational Health Management Protocol for renovation of the buildings in compliance with the national legislation. ESMP shall further include a Labour Management Procedure to support contractors and workers involved in the project to comply with the SES and International Labor Standard. Additionally, as trainings and awareness raising will be organized for stakeholders and practitioners to better understand safety issues associated with energy management and energy efficiency of the buildings and recommendation will be provided for further incorporation in tender document during project implementation</p>
<p>Risk 3: Increases of greenhouse gas emissions or other drivers of climate change due to increased energy density of dwellings in newly built complexes.</p>	<p>I = 3 L = 1</p>	<p>Moderate</p>		<p>Due to the higher energy efficiency of the residential buildings, residents will spend less money on energy to heat and cool their apartments and may spend the freed resources on purchasing additional energy consumers, such as larger refrigerators or more powerful indoor lighting devices.</p> <p>Such risks of oversized consumer appliances will be addressed by the Project Team during training sessions with residents and via information campaigns in the media and on-site information boards.</p>
<p>Risk 4: The elements of construction, operation or decommissioning during project's implementation may pose potential safety risks to local communities</p>	<p>I = 4 L = 2</p>	<p>Moderate</p>	<p>This risk is not fundamentally different from the risks associated with any other building construction works within the cities, but in an</p>	<p>As an essential part of planning the construction works, the local authorities need to ensure that the related works are not posing any safety risks for the population as required also by the national laws and/or International Standards and Best Practices (the most stringent one will</p>

<p>Standard 3: 3.1-3.2-3.4-3.5-3.7-3.8</p>			<p>y case, should be properly monitored and managed during the project implementation stage.</p> <p>Construction companies will be selected through the definition of parameters in the tendering process which require high health, safety and environmental standards</p>	<p>l be applied).</p> <p>This risk is primarily applicable to the Output 11.1 and 1.2, where construction work is expected but also to all other project activities as they shall all be promoting/mainstreaming health, safety and high environmental standards.</p> <p>-</p> <p>ESMF shall set the principles and standards for health, safety and environmental standards/sustainability. Detailed explanation about the arrangements to mitigate this risk needs to be included into ESMP for each building prior to start of any construction work.</p> <p>During the implementation, the construction companies will be selected through an international tendering process. Detailed requirements will be specified in the tenders following international standards and best practices (the most stringent one will be applied).</p> <p>A GRM will be developed to mitigate/resolve any complaints.</p>
<p>Risk 5: There is the risk that the construction activities might create disturbance to the people living in the intervention areas leading them to move somewhere else temporarily.</p> <p>Standard 5: 5.1</p>	<p>I=2 L=2</p>	<p>Moderate</p>	<p>There could be a temporary resettlement nearby the construction/intervention areas due to the disturbance caused by the construction activities (noise, dust). People living in the nearby areas might decide to move somewhere else temporary.</p>	<p>The type of the initially foreseen interventions includes primarily insulation, new doors and windows. This might be associated with a possible noise increase but is not expected to lead to a temporary resettlement.</p> <p>This will be re-assessed at the funding proposal to ensure appropriate management action is in place, if the types of the planned refurbishments expand in a way to possibly cause temporary discomfort in case of dust or noise. Given the currently envisaged types of interventions (construction of the new buildings with renewable energy applications and renovation of the existing public buildings...)</p>

				<p>ing to be equipped with the new technologies on the energy management and measurement systems etc.), this indirect risk is considered low/moderate.</p> <p><u>A GRM will be operational to receive and respond to any complaints.</u></p>
<p>Risk 6: The project design for constructions of the buildings might not consider access to the buildings by people with disabilities</p> <p>Principle: P1-P5</p>	<p>I=3 L=2</p>	<p>Moderate</p>	<p>There could be a risk that buildings are constructed in a way that makes or keeps them inaccessible to persons with disabilities.</p>	<p>The buildings subject to the project will be 2 residential and 1 public buildings, and there is the probability that the design might omit the design on the accessibility by persons with disabilities and that the project might exacerbate the problem. The Project team will only have a mandate to improve the energy efficiency qualities of the buildings design and will have to leverage over broader buildings design features.</p> <p>During project development and during the building design process, the buildings will be screened in relation to accessibility by persons with disabilities to ensure that the project does not accentuate this issue in any way.</p> <p>The ESMF would identify opportunities to engage with the Ministry of Construction to discuss and share best accessibility design guidelines in expectation that low accessibility risks can be addressed by the design of the buildings despite the fact such issues are outside the scope of the Project.</p>
<p>Risk 7: Project activity to promote increased participation of women in the construction sector exposes women to increased risks of workplace harassment</p> <p>Principle: 8-9-10-12</p>	<p>I=3 P=2</p>	<p>Moderate</p>	<p>Participation of women in the construction sector is a nascent but growing trend in Turkmenistan. What is the cause of concern is the difficulty for equitable distribution of high-value activities to women workers/employees.</p>	<p>In its promotion of increased participation of women in the supported construction and maintenance-related project activities, the project will not encourage informal hires, but rather specifically aim at bringing women out from the grey sector into the fully contracted environment with prior know-your-rights trainings delivered to interested candidates. This will apply both to the pilot buildings and the whole Ahal City construction site and related goods/materials and equipment/services supply chains.</p>

				<p>This risk might apply to all project activities. The preparation of a Gender Analysis and related Action Plan will take place during the project development. The gender analysis will assess and present the status of the women working in the public building/construction sector and their capacity to participate in the decision-making or other processes. The gender action plan shall also outline management measures for this and list any other gender risks as well as opportunities to involve women in/through the project.</p>
<p>Risk 8: Project activities involving local/field interventions and close engagement with local communities may inadvertently contribute to the spread of COVID-19.</p> <p>Principles and Project-Level Standards: All</p>	<p>I=2 P=3</p>	<p>Moderate</p>	<p>Activities at local level are based on participatory approaches, and most of the times will include meetings and local consultations. There will be a number of training workshops and awareness events and round table meetings which will be organized mindful of government regulations and healthcare standards and related safeguards.</p>	<p>The risk will be mitigated through adequate safeguards such as: (i) clear procedures in place in case of COVID19 reinstatement of restrictions, approved during project inception (ii) use of protective equipment, maintaining social distancing and using remote methods of engagement whenever possible (iii) if adequate safeguards cannot be put in place, activities that entail close local communities engagement will be put on hold if necessary, and work programme/budget will be revised as needed. Wherever possible, on-line meeting platforms will be used instead of closed-quarters meetings and trainings.</p>
<p>Risk 9: Activities funded by project (co-)financing partners may not be carried out in consistency with UNDP SES.</p> <p>Principles and Project-Level Standards: All</p>	<p>I = 3 L = 3</p>	<p>Moderate</p>	<p>Distinction will be made at the project development stage between direct co-finance and parallel finance in line with UNDP guidance.</p>	<p>This risk is related to parallel finance/co-finance for all project activities.</p> <p>For parallel financiers, UNDP will be accountable for “including and/or reflecting” these financing activities in the UNDP project’s social and environmental assessments, management plans (i.e. requirements for “area of influence” apply). The SE risks could be managed engaging and working with partners to agree on a “common approach” to social and environmental safeguards. ESMF should be shared as a guidance on how to manage these activities.</p>

				<p>For direct co-financiers, consistency with UNDP SES principles will be sought. Safeguard measures developed by other co-financing partners for activities that are directly coordinated with the project will be reviewed by the project team and UNDP for consistency with the UNDP SES prior to initiating work on the ground.</p> <p>-</p> <p>For activities funded by co-financing partners that are directly coordinated with the project's activities, any gaps with respect to UNDP SES will be discussed and reviewed regularly, including during the multi-stakeholder coordination platform meetings and Project Board meetings. Also, the project GRM will be available for stakeholders involved in collaborative activities implemented by co-financing partners.</p> <p>As a general rule, an agreement will be aimed to be signed with co-financiers (and potentially parallel financiers), outlining that in case of discrepancy/different policies of the relevant institutions/financiers, the most stringent Environmental and Social guidelines/safeguards will be applied.</p>
<p>Risk 10: Inequitable or discriminatory distribution of rights to reside in energy efficient dwellings to people excluding those living in poverty or other marginalized or excluded individuals or groups.</p>	<p>I=2 L=2</p>	<p>Low</p>	<p>Some socially disadvantaged groups might not get a chance to be relocated from their current (energy inefficient) dwellings to the ones built according to the new building codes.</p>	<p>In assigning families and individuals to newly built and more energy efficient buildings the Government is being guided both by the current sq. footage availability per a household member and an institutional link (i.e. by whether rehoused individuals are employed by the agency/ministry sponsoring the construction of a particular block of flats). Poorer families have an equal chance to be relocated subject to them having a work affiliation (via employment of a family member), particularly if they hail from more crowded households.</p> <p>Although the Project does not partake in the selection of residents for rehousing, it will aim to collect socio-economic data on all residents rehoused to benchmark their socio-economic standing against available national an</p>

... socio-economic standing against available national and international benchmarks and discuss the findings with the project partners to ensure non-discriminatory/equitable rehousing practices.

QUESTION 4: What is the overall project risk categorization?

Note: Project categorization is determined by the highest level of significance of identified risks across all potential risk areas (as rated in Question 3).

Low Risk	<input type="checkbox"/>	
Moderate Risk	<input checked="" type="checkbox"/>	Given that no high risk or substantial risk elements were identified during the final screening the project as a whole can be assessed as a moderate risk project.
Substantial Risk	<input type="checkbox"/>	
High Risk	<input type="checkbox"/>	

QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are triggered? (check all that apply)

Question only required for Moderate, Substantial and High Risk projects.

<u>Is assessment required? (check if "yes")</u>	<input checked="" type="checkbox"/>		Status? (completed, planned)
<i>if yes, indicate overall type and status</i>		<input checked="" type="checkbox"/>	Targeted assessment(s)
		<input type="checkbox"/>	ESIA (Environmental and Social Impact Assessment)
		<input type="checkbox"/>	SESA (Strategic Environmental and Social Assessment)
Are management plans required? (check if "yes")	<input checked="" type="checkbox"/>		

<i>If yes, indicate overall type</i>	<input checked="" type="checkbox"/>	Targeted management plans (e.g. Indigenous Peoples Plan, Resettlement Action Plan, others)	Planned during implementation: Gender Action Plan; waste disposal/management plan(s) and other site-specific plans to be identified in ESMF
	<input type="checkbox"/>	ESMP (Environmental and Social Management Plan)	
	<input checked="" type="checkbox"/>	ESMF (Environmental and Social Management Framework)	A simplified ESMF is planned during project development for some of the structural components (batteries).
<i>Based on identified risks, which Principles/Project-level Standards triggered?</i>		Comments (not required)	
<i>Overarching Principle: Leave No One Behind</i>	---		
<i>Human Rights</i>	<input checked="" type="checkbox"/>		
<i>Gender Equality and Women's Empowerment</i>	<input checked="" type="checkbox"/>		
<i>Accountability</i>	<input checked="" type="checkbox"/>		
<i>1. Biodiversity Conservation and Sustainable Natural Resource Management</i>	<input type="checkbox"/>		
<i>2. Climate Change and Disaster Risks</i>	<input checked="" type="checkbox"/>		
<i>3. Community Health, Safety and Security</i>	<input checked="" type="checkbox"/>		
<i>4. Cultural Heritage</i>	<input type="checkbox"/>		
<i>5. Displacement and Resettlement</i>	<input checked="" type="checkbox"/>		
<i>6. Indigenous Peoples</i>	<input type="checkbox"/>		
<i>7. Labour and Working Conditions</i>	<input checked="" type="checkbox"/>		

	8. Pollution Prevention and Resource Efficiency	<input checked="" type="checkbox"/>	

Final Sign Off

Final Screening at the design-stage is not complete until the following signatures are included.

Signature	Date	Description
QA Assessor		UNDP staff member responsible for the project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks	
<p>INSTRUCTIONS: The risk screening checklist will assist in answering Questions 2-6 of the Screening Template. Answers to the checklist questions help to (1) identify potential risks, (2) determine the overall risk categorization of the project, and (3) determine required level of assessment and management measures. Refer to the SES toolkit for further guidance on addressing screening questions.</p>	
Overarching Principle: Leave No One Behind	Answer (Yes/No)
Human Rights	
P.1 Have local communities or individuals raised human rights concerns regarding the project (e.g. during the stakeholder engagement process, grievance processes, public statements)?	No
P.2 Is there a risk that duty-bearers (e.g. government agencies) do not have the capacity to meet their obligations in the project?	No

P.3	Is there a risk that rights-holders (e.g. project-affected persons) do not have the capacity to claim their rights?	No
	<i>Would the project potentially involve or lead to:</i>	---
P.4	adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
P.5	inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups, including persons with disabilities? ^[1]	Yes
P.6	restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalized individuals or groups, including persons with disabilities?	No
P.7	exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Gender Equality and Women's Empowerment		
P.8	Have women's groups/leaders raised gender equality concerns regarding the project (e.g. during the stakeholder engagement process, grievance processes, public statements)?	Yes
	<i>Would the project potentially involve or lead to:</i>	---
P.9	adverse impacts on gender equality and/or the situation of women and girls?	Yes
P.10	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	Yes
P.11	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i>	No
P.12	exacerbation of risks of gender-based violence? <i>For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc.</i>	Yes
Sustainability and Resilience: Screening questions regarding risks associated with sustainability and resilience are encompassed by the Standard-specific questions below		
Accountability		

<i>Would the project potentially involve or lead to:</i>	--
P.13 exclusion of any potentially affected stakeholders, in particular marginalized groups and excluded individuals (including persons with disabilities), from fully participating in decisions that may affect them?	Yes
P.14 grievances or objections from potentially affected stakeholders?	Yes
P.15 risks of retaliation or reprisals against stakeholders who express concerns or grievances, or who seek to participate in or to obtain information on the project?	No
Project-Level Standards	
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management	
<i>Would the project potentially involve or lead to:</i>	--
1.1 adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? <i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	Yes
1.2 activities within or adjacent to critical habitats and/or environmentally sensitive areas, including (but not limited to) legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3 changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4 risks to endangered species (e.g. reduction, encroachment on habitat)?	No
1.5 exacerbation of illegal wildlife trade?	No
1.6 introduction of invasive alien species?	No
1.7 adverse impacts on soils?	Yes
1.8 harvesting of natural forests, plantation development, or reforestation?	No
1.9 significant agricultural production?	No
1.10 animal husbandry or harvesting of fish populations or other aquatic species?	No

1.11	significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	No
1.12	handling or utilization of genetically modified organisms/living modified organisms? ^[2]	No
1.13 ^[3]	utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.14	adverse transboundary or global environmental concerns?	No
Standard 2: Climate Change and Disaster Risks		
<i>Would the potentially involve or lead to:</i>		---
2.1	areas subject to hazards such as earthquakes, floods, landslides, severe winds, storm surges, tsunami or volcanic eruptions?	No
2.2	outputs and outcomes sensitive or vulnerable to potential impacts of climate change? <i>For example, through increased precipitation, drought, temperature, salinity, extreme events</i>	No
2.3	direct or indirect increases in vulnerability to climate change impacts or disasters now or in the future (also known as maladaptive practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	No
2.4	increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?	Yes
Standard 3: Community Health, Safety and Security		
<i>Would the potentially involve or lead to:</i>		---
3.1	construction and/or infrastructure development (e.g. roads, buildings, dams)? (Note: the GEF does not finance projects that would involve the construction or rehabilitation of large or complex dams)	Yes
3.2	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	Yes
3.3	harm or losses due to failure of structural elements of the project (e.g. collapse of buildings or infrastructure)?	No

3.4	risks of water-borne or other vector-borne diseases (e.g. temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	Yes
3.5	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	Yes
3.6	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g. food, surface water purification, natural buffers from flooding)?	No
3.7	influx of project workers to project areas?	Yes
3.8	engagement of security personnel to protect facilities and property, or to support project activities?	Yes
Standard 4: Cultural Heritage		
<i>Would the project potentially involve or lead to:</i>		---
4.1	activities adjacent to or within a Cultural Heritage site?	No
4.2	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	No
4.3	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.4	alterations to landscapes and natural features with cultural significance?	No
4.5	utilization of tangible and/or intangible forms (e.g. practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
<i>Would the project potentially involve or lead to:</i>		---
5.1	temporary or permanent and full or partial physical displacement (including people without legally recognizable claims to land)?	No
5.2	economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	risk of forced evictions? ^[4]	No
5.4	impacts on or changes to land tenure arrangements and/or community based property ri	No

rights/customary rights to land, territories and/or resources?	
Standard 6: Indigenous Peoples	
<i>Would the project potentially involve or lead to:</i>	---
6.1 areas where indigenous peoples are present (including project area of influence)?	<i>No</i>
6.2 activities located on lands and territories claimed by indigenous peoples?	<i>No</i>
6.3 impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? <i>If the answer to screening question 6.3 is "yes", then the potential risk impacts are considered significant and the project would be categorized as either Substantial Risk or High Risk</i> <i>The risk is in the context of this specific project considered Moderate at this stage, applying a precautionary approach, given the range of refurbishment interventions (windows, doors, solar panel s etc) is not expected to cause relocation of ethnic minorities living around the targeted public buildings. This would be an indirect risk, which is however identified as part of this due diligence process. If the range of planned interventions change, this would be re-assessed and appropriate management measures put in place either at the funding proposal or at the implementation stage.</i>	<i>No</i>
6.4 the absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	<i>No</i>
6.5 the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	<i>No</i>
6.6 forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources? <i>Consider, and where appropriate ensure, consistency with the answers under Standard 5 above.</i>	<i>No</i>
6.7 adverse impacts on the development priorities of indigenous peoples as defined by the m?	<i>No</i>
6.8 risks to the physical and cultural survival of indigenous peoples?	<i>No</i>
6.9 impacts on the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	<i>No</i>

ization or use of their traditional knowledge and practices: <i>Consider, and where appropriate ensure, consistency with the answers under Standard 4 above.</i>	
Standard 7: Labour and Working Conditions	
<i>Would the project potentially involve or lead to: (note: applies to project and contractor workers)</i>	---
7.1 working conditions that do not meet national labour laws and international commitments?	Yes
7.2 working conditions that may deny freedom of association and collective bargaining?	Yes
7.3 use of child labour?	No
7.4 use of forced labour?	No
7.5 discriminatory working conditions and/or lack of equal opportunity?	Yes
7.6 occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	Yes
Standard 8: Pollution Prevention and Resource Efficiency	
<i>Would the project potentially involve or lead to:</i>	---
8.1 the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	Yes
8.2 the generation of waste (both hazardous and non-hazardous)?	Yes
8.3 the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?	Yes
8.4 the use of chemicals or materials subject to international bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Montreal Protocol, Minamata Convention, Basel Convention, Rotterdam Convention, Stockholm Convention</i>	No
8.5 the application of pesticides that may have a negative effect on the environment or human health?	No
8.6 significant consumption of raw materials, energy, and/or water?	No

[1] Prohibited grounds of discrimination include race, ethnicity, sex, age, language, disability, sexual orientation, gender identity, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to “women and men” or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender and transsexual people.

[2] See the [Convention on Biological Diversity](#) and its [Cartagena Protocol on Biosafety](#).

[3] See the [Convention on Biological Diversity](#) and its [Nagoya Protocol](#) on access and benefit sharing from use of genetic resources.

[4] Forced eviction is defined here as the permanent or temporary removal against their will of individuals, families or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection. Forced evictions constitute gross violations of a range of internationally recognized human rights.

Supporting Documents

Upload available ESS supporting documents.

Title

Submitted

6692_preSESP_TKM_EE in Construction Sector_11 Apr_2022_cleared
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Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Mr. Allanur Altyyev	GEF Political Focal Point and Minister	Ministry of Agriculture and Environment Protection	4/9/2022
Mr. Berdi Berdiyev	GEF Operational Focal Point and Head of the Department of International Relations and Planning	State Committee on Environment Protection and Land Resources of Turkmenistan	4/9/2022

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

Annex A – Project Map



Figure 3. Ahal region mapped (green) on the map of Turkmenistan. Ahal City district is directly adjacent to the capital of Ashgabat



Figure 4 Areas of the Project activity

