United Nations Development Programme
Country: UZBEKISTAN
Project Document

Project Title:	Market Transformation for Sustainable Rural Housing in Uzbekistan
UNDAF Outcome(s):	By 2020, rural population benefit from sustainable management of natural resources and resilience to disasters and climate change
Expected CP Outcome(s):	By 2020, rural population benefit from sustainable management of natural resources and resilience to disasters and climate change
Expected Output(s):	Appropriate policy/regulations/financial products (green mortgage) are in place to enable scaling-up of construction of low-carbon housing/settlements
Executing Entity/Implementing Partner:	State Committee for Architecture and Construction (Gosarchitectstroy) of the Republic of Uzbekistan
Implementing Entity/Responsible Parties:	UNDP

Brief Description

The UNDP project **objective** is to provide Uzbekistan's rural population with improved, affordable and environmentally friendly living conditions. The project seeks to transform the rapidly growing rural housing sector in Uzbekistan towards a more sustainable and low-carbon development pathway by designing, piloting and scaling-up a green mortgage market mechanism, which will boost the demand for low-carbon housing among the Uzbek rural population. The use of GEF funds for the green mortgage mechanism will leverage substantial government and private investments in the housing sector and develop an innovative product that can be replicated broadly in Uzbekistan by the Government and other sources of climate financing.

Country Programme Period:	2016-2020
Key Result Area (Strategic Plan):	Growth is inclusive and sustainable, incorporating productive capacities that create employment and livelihood for poor and excluded
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Project ID:	00090382
PIMS ID:	5392
Start date:	December 1, 2016
End date:	November 30, 2022
PAC Meeting Date:	TBD
Management Arrangements:	NIM

Agreed by (Government): State Committee for Architecture and Construction of the Republic of Uzbekistan

Mr. Azamat Tokhtaev, First Deputy Chairman

NAME SIGNATURE DATE

Agreed by UNDP:

Mr. Stefan Priesner, Resident Representative

NAME SIGNATURE DATE

TABLE OF CONTENTS

List of Acronyms 4

I. SITUATION ANALYSIS 5

Project Background and Context 5
Root Causes of GHG Emissions 9
Policy and Regulatory Framework 10
Housing and Rural Development Policies and Regulations 11
Investment Framework 13
Legal Framework 15
Institutional Framework 15
Project Baseline 17
Barriers 22

II. STRATEGY 24

Project Approach 24
Rationale 24
Areas of Activity 24
Project Objectives 25
Description of Project Outputs and Activities 26
Project Benefits 37

III. PROJECT RESULTS FRAMEWORK: 45

Project Logical Framework (GEF) 45
TOTAL BUDGET AND WORK PLAN 55
Timetable for Project Implementation 60

IV. MANAGEMENT ARRANGEMENTS 65

Arrangements for project/programme implementation 65
Legal Context 81

V. ANNEXES 82

Annex 1: List of Resources Consulted 83
Annex 2: Additional Information on the Green Mortgage Mechanism 87
Annex 3 Analysis of Aid-Funded Projects Complementarity 106
Annex 4 Stakeholder Analysis 108
Annex 5 Documentation of Selected Stakeholder Consultations in 2014-2015 112
Annex 6. Terms of Reference for Project Board and National Project Coordinator 115
Annex 7 Terms of Reference for Key Project Staff 118
Annex 8: Project Risk Assessment 144
Annex 9 Theory of Change 146
Annex 10 Technical Annex 147
Annex 11: GHG Emissions Reduction Calculations and Methodology 155
Annex 12 UNDP Environmental and Social Impact Assessment (ESIA) 159
Annex 12a Brief Gender Analysis 168
Annex 13 Government Statement on EIA 180
Annex 14 Project Linkages with Presidential Resolution PP-2343 182
Annex 15 Co-Financing Letters 184

List of Acronyms

ADB	Asian Development Bank
APOT	the building code that covers territorial planning in rural areas
CDM	Clean Development Mechanism
CO	[UNDP] Country Office
EE	Energy Efficiency
EEPB	Energy Efficiency in Public Buildings (UNDP-GEF project)
EMIS	Energy Management Information System
GCF	Green Climate Fund
GEF	Global Environmental Facility
Gosarchitectstroy	State Committee for Architecture and Construction of the Republic of Uzbekistan
GWh	gigawatt-hours
IE	Implementing Entity
IMCCDM	Inter-Ministerial Council on the Clean Development Mechanism
IsDB	Islamic Development Bank
LED	light emitting diode
LIBOR	London Inter-Bank Offer Rate
MEPS	minimum energy performance standards
MRV	monitoring, reporting, and verification
NBU	National Bank of Uzbekistan
NPC	National Project Coordinator
NIM	National Implementation Modality
PAC	Project Appraisal Committee
PB	Project Board
PIU	Project Implementation Unit
POPP	[UNDP] Programme and Operational Policies and Procedures
QQB	Qishloq Qurillish Bank (transliterated in some sources as Kishlok Kurilish Bank)
RHP	Rural Housing Programme
SBAA	Standard Basic Assistance Agreement
SLD	Sustainable Local Development
tce	tonnes of coal equivalent
tCO_2e	tonnes of carbon dioxide equivalent
TNA	Technology Needs Assessment
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
Uzhydromet	Centre of Hydro-meteorological Service under the Cabinet of Ministers

I. SITUATION ANALYSIS

Project Background and Context

Figure 1: Location of the Republic of Uzbekistan

The Republic of Uzbekistan is a lower middle income, resource rich, doubly-landlocked country that is located in the heart of Central Asia. It is bounded by Kazakhstan to the north and west, Turkmenistan and Afghanistan to the south, and Tajikistan and Kyrgyzstan to the east (Figure 1). Its total land area is 448,900 km^2, of which 78% are plains, and 22% are mountains and mountainous valleys. The country is administratively divided into 12 regions, the autonomous Republic of Karakalpakstan, and the capital city of Tashkent.

Uzbekistan is the most populous country in Central Asia, with one third of the region's population, amounting to over 31 million people.[1] Two thirds of this population is younger than age 30. Despite steady economic growth in the last decade, the impact of economic growth on improving livelihoods has been inadequate. Poverty rates are higher in rural areas, and while differences in the rates between rural and urban areas decreased from 8% in 2001 to 6.7% in 2013, they still exist.[2] Disparities in economic and social development remain not only between rural and urban areas but also between regions of the country. Poverty in Uzbekistan has distinct rural and regional dimensions: 49.2% of people live in rural areas[3]; 47% of the southern provinces are classified as poor, and 27% as extremely poor. This "development gap" can be explained by the fact that economic growth since 2001 has occurred mainly in regions with strong manufacturing sectors, extractive industries, and modern services.

Current Climate

Uzbekistan has a continental climate that can result in both very hot and very cold weather. Temperatures in the winter can reach as low as -40^{0}C and in the summer higher than 40^{0}C. These extremes can make the construction of efficient and comfortable housing challenging.

Since 1951, there has been an observed trend of warming within Uzbekistan. The annual average temperature has increased by 0.29 ^{0}C for each 10 years[4] since 1951, for example, with minimum temperatures increasing more than maximum temperatures[i]. However, there are some significant exceptions to this trend, including: i) the Aral Sea, where the maximum temperature has increased more than the

[1] Source: State Committee of Statistics of the Republic of Uzbekistan, see at http://www.stat.uz/ru/demograficheskie-dannye
[2] *Millenium Development Goals Report: Uzbekistan 2015*: p. 18.
[3] Ministry of Economy of Uzbekistan (2011).
[4] Government of Uzbekistan (2008). *The Second National Communication of the Republic of Uzbekistan to the UNFCCC*: p. 205.

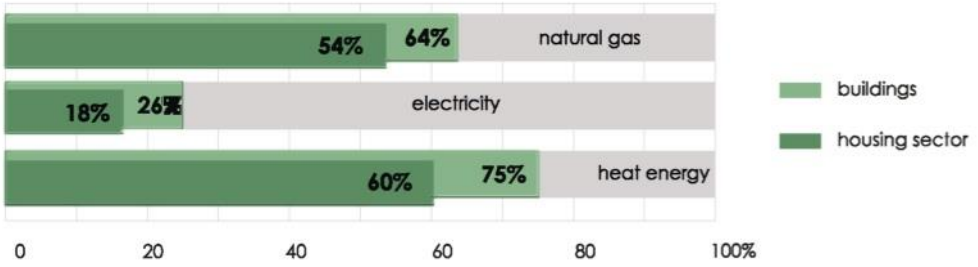
national average whilst the minimum temperature has remained constant[5]; and ii) mountainous areas, where warming has been lower than the national average.

Buildings, Energy Use and Climate Change

Globally, GHG emissions from the building sector have more than doubled since 1970 to reach 9.18 $GtCO_2e$ in 2010, representing 19% of all global GHG emissions. The building sector offers the greatest potential for abatement, as increasing the efficiency of energy use in buildings has an estimated mitigation potential of 3.3-4 $GtCO_2e$/year. Almost 40% of all non-OECD GHG emissions in the buildings sector come from middle-income countries in Eastern Europe and Central Asia.[6]

Uzbekistan's Second National Communication to the UNFCCC[7] identifies the residential building sector as the largest energy consumer in the country (see Figure 2); the sector is responsible for half of all energy-related GHG emissions (approximately 80 million tCO_2e annually). According to UN estimates, the population of Uzbekistan will increase by more than 20% over the next 15 years. In turn, residential energy consumption is projected to rise by over 30% by 2050, posing a threat to national energy security and resulting in an increase in global GHG emissions.[8] The building sector is identified as a priority area for GHG reductions in the national Low-Emission Development Strategy, it is accompanying Road Map on Transition to Low-Emission Development, and in the country's National Communications to the UNFCCC.

Figure 2: Final energy consumption of the housing sector and the buildings sector as a whole in Uzbekistan[9]



Source: UNDP (2014), *Energy Efficiency in Buildings: Untapped Reserves for Uzbekistan Sustainable Development*.

Resource pressures in housing are particularly evident in rural areas, where approximately half of the population (15.28 million people) lives. Rural housing dominates new housing construction, and it accounts for 76% of new buildings under construction (see Table 1).

Table 1: Trends in New Housing in Uzbekistan, 2009-2013 (m^2)

	2000	*2005*	*2009*	*2010*	*2011*	*2012*	*2013*
Urban Housing Stock	1,032,000	720,300	2,569,700	2,163,400	2,259,000	2,623,600	2,692,600

[5] This anomaly is due to the considerable loss of area of surface water of the Aral Sea.
[6] UNEP (2009). *Buildings and Climate Change: Summary for Decision Makers*: 9.
[7] Government of Uzbekistan (2008). *The Second National Communication of the Republic of Uzbekistan to the UNFCCC*.
[8] UNDP (2014), *Energy Efficiency in Buildings: Untapped Reserves for Uzbekistan Sustainable Development*, http://www.uz.undp.org/content/uzbekistan/en/home/library/environment_energy/energy-efficiency-in-buildings--untapped-reserves-for-uzbekistan.html.
[9] Ibid.

Rural Housing Stock	6,974,000	5,351,300	5,104,400	6,695,800	6,944,300	7,744,100	8,051,000
Of That: Rural Single Family Homes Based on Standardized Designs	-	-	101,000	884,500	958,400	1,301,700	1,323,900

Source: State Committee on Statistics

The overall number of new housing units in rural Uzbekistan is significantly outpacing rural housing construction in other CIS countries; construction rates of new housing per 1,000 persons in rural areas are five times higher than Kyrgyzstan, twice as high as in Kazakhstan, and 1.3 times higher than in Russia.[10]

Furthermore, the Government is planning to increase investment in new rural housing and infrastructure and has set up the following targets to be achieved through government investment programs by 2020: 2,500 new settlements, 87,000 new houses, 1,400 new social facilities (schools/hospitals), 2,000 km of gas supply pipeline, 1,700 km of roads and 2,000 km of water supply networks (see Table 2 below for planned housing construction).

Table 2: Government Targets for Housing Construction in Rural Areas, 2015-2020

	2015	2016	2017	2018	2019	2020
Rural houses to be built under programme	12,000	13,000	14,000	15,000	16,000	17,000

Source: State Committee For Architecture and Construction

With the growth projected in new construction, residential energy consumption is projected to rise by over 30% by 2050, posing a threat to national energy security and global GHG emissions (see Table 3 below). On the other hand, the potential for energy savings and corresponding reductions in GHG emissions in Uzbekistan by addressing these problems is high. A UNDP-commissioned assessment of energy consumption in Uzbekistan estimated that the technical potential for energy savings in residential space heating was 8-13 million tonnes of coal equivalent, or 51-83% of energy consumption in 2011.

Table 3: Trends in Baseline Residential Energy Use, 2010-2050 (thousand tonnes of coal equivalent)

[10] S.N. Isakulov. Roundtable presentation, Tashkent (16 June 2014).

	2010	2020	2030	2040	2050
By energy resources					
Coal	21	19	18	17	16
Oil products	27	30	30	29	28
Natural gas	16491	19121	19957	20680	21161
Renewables	101	128	139	145	148
Other solid fuels	516	499	490	463	427
Electricity	951	1172	1430	1775	2131
same, mln. kWh	*7731*	*9525*	*11626*	*14427*	*17326*
Heat	1785	1986	2046	2108	2157
Total	**19893**	**22955**	**24109**	**25217**	**26069**
By processes					
Space heating	12975	15077	15780	16614	17345
DHW	3891	4425	4643	4687	4601
Cooking	2196	2408	2374	2264	2114
Appliances	830	1045	1312	1652	2009

Source: UNDP (2014), *Energy Efficiency in Buildings: Untapped Reserves for Uzbekistan Sustainable Development*.

Finally, it is important to note that buildings have been identified as playing a potentially important role in adaptation to climate change. As the Second National Communication to the UNFCCC notes, "In construction sector, increase in summer temperatures will lead to necessity of developing new projects of residential, agricultural and industrial buildings adjusted to very hot and dry climate conditions as well as production and import of new construction materials," and it places these needs in the category of priority strategies and adaptation measures.[11]

Rural Housing and Living Standards

Unfortunately, high levels of energy consumption have not generated as many benefits as they could in rural areas. Of the 3.4 million rural households in Uzbekistan, which have an average household size of five, approximately 1.5 million families are in need of improved living conditions.[12]

- Energy supply can be unreliable and intermittent.[13] In some regions where a lack of gas and low electrical voltage rule out those heating options, families may limit the number of rooms that are heated and switch to coal or fuelwood. Observations suggest that, while newer rural houses have better access to gas, availability and pressure tend to decrease the further the settlements are from urban areas.[14] There are also instances where gas from the grid is provided only at fixed intervals during the day for cooking, or where propane cannisters are distributed to meet cooking needs.
- Only 50% of rural housing stock has indoor plumbing, and more households have a natural gas connection (72%) than have a tap water connection.[15] While new houses constructed under the RHP have a tap water connection, they may also be subject to scheduled outages.
- A secondary effect of these deficiencies has been to force some rural populations to switch to coal for heating, which increases rural GHG emissions and reduces local air quality.[16]
- There is relatively low penetration of air conditioning, even in arid regions with high numbers of cooling degree-days: an average of 18.5 air conditioning units per 100 households in 2011 for the

[11] Government of Uzbekistan (2008), *Second National Communication to the United Nations Framework Convention on Climate Change:* 13.
[12] Institute of Social Studies in Uzbekistan (2014).
[13] United Nations in Uzbekistan and the Government of the Republic of Uzbekistan (2015), Uzbekistan UNDAF (2016-2020): 33.
[14] Rudenko (2015). "Observational Study of Rural Household Energy Use": 4.
[15] Source: Committee on Statistics of the Republic of Uzbekistan. Numbers are for 2013.
[16] For example, a 2013 resolution of the Council of Ministers "On additional measures for providing consumers of the Khorezm region with the fuel and energy resources" created a coal briquette manufacturing facility and delivery company, and the text states that this approach may be used in other regions. Other sources such as Rudenko (2015) also mention coal use for heating.

country as a whole, with lower penetration in rural areas.[17]

Root Causes of GHG Emissions

Projected growth in residential energy demand is primarily driven by the space heating needs of increasing housing stock. Rural housing plays a significant role in the overall housing sector both because of its growth and because it consists largely of individual family houses, which are, on average, less energy-efficient than multi-unit dwellings. Due to high energy losses, these houses consume an average of 320-390 kWh/m^2, compared to 150 kWh/m^2 in Europe for houses of the same age located in similar climatic zones.[18]

The root causes of high levels of energy consumption in rural areas fall into several categories. The first is related to construction practices. Traditionally, Uzbek villages were built on an *ad hoc* basis using traditional materials such as unfired clay bricks. Rural houses in the past did not use standard designs, and most were built without blueprints. A 2015 survey found that 90% of existing rural residential housing stock is more than 15 years old, and much of it falls into this category.[19] Furthermore, the survey found that 68% of rural houses had single-pane windows with wooden frames, and more than 95% of buildings were constructed without roof insulation. Inefficient boilers and furnaces were another problem: 55% of boilers and furnaces were home-built, resulting in efficiency levels of about 50%. Furthermore, 85% of these were more than 10 years old, and less than 1% of the units had automatic thermostats.[20] Other contributing factors to low efficiency in buildings include the use of obsolete insulation materials and the use of inefficient boilers and air conditioners.

Since the start of the national Rural Housing Programme (RHP), standard designs have been introduced and applied in all new settlements. Over time, some improvements have been made; for example, boilers are now located inside the building, which reduces energy loss and the need for additional insulation. However, the characteristics of standard house design still fall short of the existing potential for energy savings and GHG emissions reduction. For example, the standard homes use radiators that do not have regulators, the boilers are not highly efficient, some piping for the heating system runs under the roof in a cold area, and there is a lack of insulation above the ceilings of the houses. An analysis of these designed (see Baseline Analysis below) showed that up to 60% additional savings could be achieved cost-effectively in new houses, if additional energy efficiency and renewable energy measures were introduced. Furthermore, research commissioned during project preparation identified shortcomings in using a single RHP house design across Uzbekistan's varied regions.[21] Both the availability of local construction materials and the need for heating and/or cooling vary widely across the country. A single standard design cannot capture opportunities to use local sources of alternative energy, nor can it offer maximum comfort to residents. The existing residential building code, which allows for higher-than-necessary energy consumption in houses, is a related issue. In addition, there is a need to monitor the code compliance of rural houses, but monitoring capacity is in need of strengthening.

Another root cause is related to zoning and settlement planning. Land-use plans for new areas do not take low-carbon considerations into account, thus missing an opportunity to realise even larger efficiency gains from applying passive solar design techniques and village-level energy solutions. For example, zoning regulations do not require developers and builders to consider the orientation of their buildings to maximize passive heating and cooling, although proper siting could significantly reduce the need for both at no

[17] UNDP (2014). *Energy Efficiency in Buildings: Untapped Reserves for Uzbekistan Sustainable Development:* 47.

[18] Ibid.

[19] Center for Economic Research (2015).

[20] Ibid.

[21] Kuchkarov, R. (2015): 1.

additional cost.

An additional cause of high levels of energy consumption is the relatively low level of residential tariffs for gas and electricity. These low rates reduce incentives to save energy by minimizing monetary savings to consumers. They also increase the payback period of investments in energy efficiency and renewable technologies, which in turn constrains the development of a market for these products. The return on investment for energy-efficient houses under various tariff scenarios was estimated during the prepration of the project, and the results are provided in Annex 2.

Finally, as noted in the current UNDP Common Country Assessment, "Fossil fuel consumption is also driven by a lack of sustainable alternatives. While it is estimated that Uzbekistan has large solar potential and some potential for wind and biogas, as well as medium, small and micro hydro and geothermal energy, but this potential has not yet been studied in detail. In the next five years, the production costs for solar electricity are predicted to drop below the retail price of electricity, unleashing a construction boom in solar power plants. Photovoltaic panels are already a cost-effective solution for large plants, as well as for those living in remote areas where supply through the national grid is not viable."[22]

Policy and Regulatory Framework

Uzbekistan's national planning processes clearly state the goal of ensuring that principles of sustainable natural resource use are effectively integrated into policy-making, legislation and institutions. These principles have been adopted to allow the country to ensure water, energy and food security for the population; and to ensure that its development is economically, environmentally and socially sustainable.

Energy and Climate Policies and Regulations

The **National Low-Emission Development Strategy of Uzbekistan,** which was developed with technical assistance from UNDP, prioritizes the building sector and energy sector (demand and supply) as the key sectors where investments should be focused.

The **National Programme for Increasing Energy Efficiency in Buildings** (2015-2020) is designed to reduce energy consumption, improve competitiveness and to catalyse economic transformation and well-being through the following: strengthening norms; the development of prototype efficient buildings; research and development; the production of efficient construction materials and air conditioning equipment; tax and customs incentives; the creation of favourable conditions for attracting investment in energy-efficient buildings and facilities; the construction of energy-efficient buildings and facilities; training for architects, engineers, and energy auditors; and other activities.

The Government has also adopted specific **Presidential Resolutions** to support rural housing in Uzbekistan, including the following: Resolution PP-1167 "On additional measures on expansion of housing construction in rural areas" (adopted 3 August 2009); Resolution PP-1354 "On additional measures on expansion of individual housing construction in rural areas on basis of standard designs" (17 June 2010); Resolution PP-1403 "On additional measures on development of planning and improvement of housing construction in rural areas" (8 September 2010); Resolution PP-1683 "On first-priority measures on realization of the Programme of multi-tranche financing of the project 'Housing construction development in rural areas'" (11 January 2012); and Resolution PP-2282 "On the Programme for the Construction of Individual Housing Stock using Standardized Designs in Rural Areas for 2015 and Construction Parameters for 2016. (07 January 2015). The most recent resolution approves the interagency Rural Housing Programme for 2015 and commissions the Minister of Finance to sign the loan agreement for the third

[22] UNDP Common Country Assessment, 2014: 112-113.

tranche of the rural housing loan issued by the Asian Development Bank. In addition, it endorses cooperation with the two participating banks, QQB and Ipoteka Bank, and cooperation with the Islamic Development Bank. Finally, it provides several concessions to project-related investments, such an import tax waiver for construction materials such as lumber, sheet metal for roofs, and chipboard sheets for flooring.

The most recent relevant Presidential Decree is PP-2343 "On a Programme of Activities to Reduce Energy Intensity and the Implementation of Energy-saving Technologies in Branches of the Economy and the Public Sector" (5 May 2015). This document, which was followed by the Resolution of the Cabinet of Ministers "On Approval of the Regulation on the Republican Commission on the Matters of Energy Efficiency and Renewable Energy Sources", #238 of 13 August 2015, creates a Republic-Level Commission for Energy Efficiency and Renewable Energy Resources Affairs, which is to be chaired by the Prime Minister. The document also includes a roadmap for measures generate energy savings and develop renewable energy for the period 2015-2019, such as ensuring energy efficiency in the residential buildings sector and speeding up the development of renewable energy resources, in particular solar energy.[23] Finally, the resolution endorses an inter-agency program of activities to reduce energy consumption in various sectors and targets for reducing energy intensity. Annex 14 provides a detailed list of linkages between PP-2343 and this project. In the area of renewable energy resources, there is a 2013 Presidential Decree "On measures to further increase use of renewable energy sources" and a corresponding Resolution of the Cabinet of Ministers.

Finally, the **Cabinet of Ministers** recently passed an important **resolution** related to home appliances. Resolution #86 (9 April 2015), Article 171 mandates the introduction of a national system of labelling and certification of energy use in new home appliances (on the basis of an A-G rating system), and newly constructed buildings as of January 1, 2016. The resolution also mandates phasing out the least efficient home appliances on a gradual basis, so that appliances with ratings from "E" to "G" would not be on the market by January 1, 2019. The national utility, Uzbekenergo, and government agencies responsible for standards and energy monitoring are required to develop norms for measuring and certifying the energy performance of home appliances by September 1, 2015, and customs and duties agencies are tasked with monitoring imported appliances.

The **Initial National Communication to the UNFCCC**[24] (1999) ranks measures to improve energy efficiency in the building sector as the most cost-effective option to reduce GHG emissions in Uzbekistan, being more cost-effective than the power sector, industry or transport. The **Second National Communication** (2008)[25] notes that energy consumption in the residential sector remained the second-highest source of GHG emissions in the country (after the energy sector) between 1994 and 2005, the latest year for which figures are available.

Housing and Rural Development Policies and Regulations

In response to the projected annual growth rate in the rural population of 2.7%, the Government of Uzbekistan is making significant investments in new rural and peri-urban settlements through its State Programme on Housing for Sustainable Rural Development (referred to here as the Rural Housing Programme, or RHP).[26] Launched in 2009, the RHP was accompanied by a Presidential Decree, "On

[23] Annex 13 provides an overview of areas where the project is directly relevant to the 2015-2019 roadmap for policies and measures.

[24] Government of Uzbekistan (1999), Initial National Communication to the United Nations Framework Convention on Climate Change http://unfccc.int/essential_background/library/items/3599.php?rec=j&priref=2445#beg

[25] Government of Uzbekistan (2008), *Second National Communication to the United Nations Framework Convention on Climate Change*, http://unfccc.int/essential_background/library/items/3599.php?rec=j&priref=6568#beg

[26] Additional information on the Rural Housing Programme is available at ADB (2015), *Housing for Integrated Rural*

Additional Measures for Scaling-Up Housing Construction in Rural Areas." Under the RHP, the Government has invested over US$ 2.5 billion between 2009 and 2014 in the construction of over 1,000 new rural settlements, including a total of 33,557 houses from 2009 to 2013 and 11,000 houses in 2014.[27] The RHP grew exponentially from US$ 25.4 million in 2009 to US$ 886.3 million in 2014. In this period, more than 6.5 million m^2 of housing space was constructed and sold in rural areas across Uzbekistan. Construction is based on standard designs such as those depicted in Figure 3.

Figure 3: New Rural Settlements in Uzbekistan

Source: www.gazeta.uz

The main regulatory tool adopted by the Government of Uzbekistan to reduce GHG emissions in the buildings sector has been the introduction and gradual strengthening of thermal performance requirements in **Building Codes**. Beginning with a UNDP-GEF project in 2009, ten building codes covering public buildings regulating the thermal performance of various building elements (roofs, heating, ventilation) were revised, and energy efficiency requirements were strengthened, ensuring reductions in energy consumption levels of 25% to 50% depending on the type of building. Two of the revised codes were approved in 2010, and seven more were approved and entered into force in June 2011. Consequently, standard designs of rural houses were adjusted in 2011 to comply with new requirements. The tenth revised code, which included a section on energy efficiency and required the completion of an energy passport, was approved in 2012.

In addition to building codes, **land use planning and zoning codes** also influence housing and settlement construction. The placement of buildings in both urban and rural areas is governed by code ШНК 2.07.01. There are minimum requirements for the amount of daylight that should reach living rooms, bedrooms, and kitchens; these are specified in code КМК 2.01.05.

There are also planning and zoning regulations that pertain specifically to the RHP, such as the new code entitled "Architecture-Planning Organization of Territories in Rural Areas," or APOT (ShNK 2.07.04-12). The APOT forms the basis of town planning documents in rural areas, and it is designed with a time horizon of 10-15 years. The APOT is a key entry point for sustainable interventions at the rural level, because it provides guidance to budgetary and regulatory agencies and developers not only on zoning, but also on water supply, waste treatment, and heat and power supply. Its scope provides an opportunity to introduce sustainable energy or planning solutions at a town level, rather than house by house, which can allow for economies of scale in energy generation, water use, and other areas with high potential for resource savings. Additional information on the APOT is provided in Annex 10.

Development Investment Program, http://www.adb.org/projects/documents/housing-integrated-rural-development-investment-program-uzbekistan-rrp

[27] Government of Uzbekistan (2013) "Government Approves the Rural Housing Programme for 2014." http://www.uzbekembassypakistan.org/?q=nod; and Quishloq Qurilish Bank (2014) "Financing Support of Housing Construction in Rural Areas and Development of Mortgage Crediting System in Uzbekistan." http://www.unece.org/fileadmin/DAM/hlm/wpla/workshops/Tashkent2014/Djabbarov_Eng.pdf

Investment Framework

Mortgage Market

Rapid growth in rural housing has been underpinned by a rapidly-growing mortgage market. All houses constructed under the Rural Housing Programme (RHP) are transferred to home owners (100% private ownership), with homeowners purchasing the home via preferential mortgages offered through Kishlok Kurilish Bank (Rural Construction Bank), National Bank and Ipoteka Bank (Mortgage Bank). To support these efforts, the Government of Uzbekistan signed a framework agreement with the Asian Development Bank (ADB) in 2011 that anticipated multi-tranche financing for housing construction in rural areas. The loan agreement for the first tranche was signed in 2012, an agreement for the second tranche was signed in 2013, and the Government and ADB signed a loan agereement for the third tranche of USD 100 million (at a rate of LIBOR plus 0.5% with a 3-year grace period for repayment) on August 20, 2015.[28]

Table 4: Construction and financing of new rural houses under the Rural Housing Programme (2009-2014)

		2009	2010	2011	2012	2013	2014
Rural houses built under programme		874	6,800	7,400	8,510	10,000	11,000
Total cost of rural houses	USD m	25.4	214.5	288.3	453.0	692.7	886.3
Financing							
Total mortgages. Financed from:	USD m	15.7	127.3	182.5	266.0	398.0	528.6
ADB loan	USD m	-	-	-	171.2	125.3	123.5
Government budget funds	USD m	15.7	127.0	160.5	65.3	231.4	353.4
Kishlok, Ipoteka banks.	USD m	-	0.3	22.0	29.5	41.3	51.8
Total financing by homeowners	USD m	9.7	87.2	105.8	187.1	294.6	357.7

Source: State Committee For Architecture and Construction

In addition, the Government signed a financing agreement in the rural housing sector with the Islamic Development Bank in November 2014 valued at USD 100 million. The funding has been designated for the construction of 1,100 houses and the associated rural infrastructure. In 2015, 835 houses were constructed using this support, and in 2016, funding will be used to construct the remaining 265 houses.

In 2015, growth in the RHP was sustained, and the demand for RHP mortgages remained strong as the number of rural houses financed with RHP mortgages totaled 12,000. The third loan tranche covers a 15-year loan, and under the agreement, the Government of Uzbekistan will on-lend USD 36 million to the National Bank of Uzbekistan (NBU) and USD 64 million to QQB.[29] Furthermore, the Government announced in 2016 that it would be expanding participation in the RHP to three additional banks: the Industrial-Construction Bank (Uzpromstroybank, a joint stock commercial bank), Asaka Bank (a joint stock commercial bank), and Halq Bank (a state commercial bank). The share of financing to be received by the participating banks will be determined by the government and stated in annual government decrees.

The development of the RHP mortgage program are underpinned by positive economic indicators for the country as a whole: overall GDP growth was 8% in 2015, economic growth in the agricultural sector was 6.8%, and economic growth in the construction sector was 17.8% for the year.[30] Participating banks have been consulted regarding projected mortgage demand during the development of the concept and the project

[28] A copy of the loan agreement is available at the following link: http://www.adb.org/projects/44318-026/main
[29] Ibid.
[30] Source: http://www.anons.uz/article/economics/16885/

documentation, and they have all stated that they forecast continued, strong demand for RHP mortgages during the project lifetime.[31]

Markets for Energy Efficiency and Renewable Energy Products and Services

The domestic supply chain for the construction industry in Uzbekistan is relatively well developed and is constantly growing. From 2009 to 2013, 1,020 new local enterprises were established, and 839 existing companies upgraded their production base. They included those firms focused on manufacturing energy efficient materials/equipment such as ceramic bricks, foam-concrete and basalt wool insulation, double/triple-glazed plastic windows and doors, gypsum-pasteboard, sandwich-panels, energy efficient boilers and stoves, etc. Upgrades in the building codes for public buildings made in the 2011-2012 period have spurred investment in this sector to meed demand from builders. One example of this phenomenon was decision to construct basalt thermal insulation manufacturing facilities at the Uzbek Metallurgical Plant in the Tashkent Region. The insulation produced will supply the local-construction industry with a new, high-quality product. The new facility, which has an estimated value of more than USD $12 million, will produce a total of about 10 thousand tons of basalt insulating boards, wired mats and mineral wool a year. In terms of the scale of production, the annual capacity of this plant (approximately 10,000 tons of basalt insulating boards) could bring about a two-fold reduction in the annual power consumption of 5,000 rural houses.

A national database of energy efficient materials and technologies was established in 2012 with UNDP support and is being updated annually by Gosarchitectstroy. As of 2014, the database includes more than 50 national enterprises specialising in energy efficient materials/equipment. In addition, there are about 30 local companies engaged in manufacturing, assembling, installation and after-sale servicing of renewable equipment/systems. Apart from domestic companies, there are a number of joint ventures that have recently been established in the sector that are engaged in manufacturing technical silicon (total capacity of 17,000 tonnes per year), assembling PV panels (50 MW) in the Navoi Region and solar collectors for water heating (50,000 units per annum), as well as energy-efficient LED lamps in the Jizzakh Region.

There are also indications of high willingness to pay for solar PV systems in areas that experience power outages, as rural residents place a premium on a secure power supply. It is also important to note that these units can be installed in new RHP houses, existing RHP houses (approximately 40,000), and other rural housing stock. The driver in market demand for these units is secure energy supply rather than economic savings, so demand is not as sensitive to energy tariffs as for other residential energy-related investments.

Energy Markets

While residential tariffs for fuel and power have increased moderately in recent years, they do not cover costs, and they remain much lower than export prices for fuel. This leads to a market distortion where homeowners do not have price signals that encourage the efficient use of resources, and prices act as a positive disincentive to invest in energy-efficient or low-carbon homes. In turn, utilities not only lack funding for grid maintenance and fuel distribution, they also do not have access to residential pricing options that would allow them to offset generation costs by stimulating investments in energy efficiency.

[31] A list of consultations is appended as Annex 5.

Legal Framework

Selected relevant legislation includes the following laws and legal codes:

- The1997 Law "On the Rational Use of Energy" mandates national, regional, and sectoral targeted programs and projects to optimize energy consumption and stimulate the manufacture of energy-saving equipment. The law also established energy monitoring in large enterprises.
- The 2006 Law "On Mortgages" (No ЗРУ-58), which anticipates specific credit instruments and mechanisms and regulates consumer mortgage credit.
- The Land Code of 30 April 1998 No. 598-1 is the primary instrument for regulating land in Uzbekistan. The code mentions rational use, land protection, and protection and improvement of the environment. Zoning regulations that address the use of agricultural land for construction are determined by a series of articles in the Civil Construction Code. The Law "On the Government Land Registry (Cadastre) of 28 August 1998 No 666-I establishes the legal basis for the land registry and land rights, and it also addresses rational land use and protection.
- The 2013 Presidential Decree "On measures for further development of alternative energy sources," represented an important step towards acknowledging the need to develop renewable energy resources in Uzbekistan. The Decree specifically mandates the development of a Law on Renewable Energy. While this law has not yet been submitted to Parliament, it was under development as of the spring of 2015.[32]
- Government land use policy is also guided by a series of presidential resolutions. For example, a 2006 declaration on individual housing states that districts are responsible for monitoring individual construction, and that it is possible to use individual designs or standardized home designs that are code compliant.
- Building codes, which are mentioned in the previous section, form a body of regulations that is the primary means of implementing standards in residential buildings. However, renewable energy use is not currently addressed in codes covering rural housing. Residential building codes are scheduled for revision in 2017.

Institutional Framework

The following section provides a brief overview of institutions that play a role in energy efficiency, renewable energy, climate change, and rural housing.

The **State Committee of Architecture and Construction of the Republic of Uzbekistan (Gosarchitectstroy)** is the national government agency that oversees building codes and permits.[33] Gosarchitectstroy, along with the Cabinet of Ministers of the Republic of Uzbekistan, and regional and local administrations, plays a key role in housing design and construction. Gosarchitectstroy is comprised of the following organisational units: 1) the State Committee of the Republic of Karakalpakstan for Architecture and Construction; 2) the Central Division for Architecture and Construction for the City of Tashkent; 3) Departments of Architecture and Construction for Cities and Regions; 4) the Territorial Division of Government Expertise; 5) the Territorial Inspectorates for the State Architectural and Construction Oversight Agency; 6) Territorial consulting centres for tendering and appraisal; 7) the Republican Centre for Standardisation and Certification in Construction; 8) the Centre for Economic Reforms and Appraisal in Capital Construction; and 9) the 'AQATM' Information-Implementation Centre.

32 UzReport Information Agency (2015), "A draft Law 'On renewable energy sources' being developed in Uzbekistan" http://news.uzreport.uz/news_2_e_130614.html

33 The agency's website is http://davarx.uz/en/

Gosarchitectstroy plays a critical role in building standards and codes; design and construction review; the promotion of designs and urban planning that exhibit improved performance, quality, and sensitivity to local culture; architectural preservation; and codes enforcement. It is also a key institution in the Rural Housing Programme (RHP), as it is in charge of overseeing construction under the initiative. Finally, Gosarchitectstroy is the lead government agency for promoting energy efficiency buildings as designated in the National Programme for Increasing Energy Efficiency in Buildings.

Gosarchitectstroy has previous experience in international project management through its role as the National Implementing Partner (executing entity) for the UNDP-GEF project on energy efficiency in public buildings (2009-2015), and it will be the national implementing partner for this proposed UNDP project. Gosarchitectstroy has also participated in bilateral and multilateral initiatives for more than two decades with other CIS member states.

The **Ministry of Economy** is highly relevant to the proposed project, because it defines the exact geographical and financial scope of the National Rural Housing Program implementation on annual basis. It also approves the final technical design of houses to be constructed and the investment from national budget. It also plays the role of the Designated National Authority (DNA) for the Clean Development Mechanism (CDM) in Uzbekistan by chairing the Inter-ministerial Council on the CDM (IMCCDM) under the Cabinet of Ministers. The IMCCDM was created in order to ensure a robust process for CDM project approval.

The **Ministry of Finance** is relevant to the proposed project, because it provides the annual allocation in the state budget for the National Rural Housing Program and is the government agency that handles sovereign lending and ODA. It also implements coordination and control over spending of grant-based technical assistance.

The Centre of Hydrometeorological Service at the Cabinet of Ministers of the Republic of Uzbekistan (Uzhydromet)[34] is responsible for hydrometeorological monitoring, observation, and forecasting in Uzbekistan. Its mandate includes climate change, it oversees the preparation of National Communications and Biennial Update Reports to the UNFCCC, and it houses the GEF Focal Point. It serves as the National Dedicated Authority for projects under the Green Climate Fund, and it is a member of the IMCCDM.

The **State Committee of the Republic of Uzbekistan on Land Resources, Geodesy, Cartography and State Cadastre**[35] oversees land-use planning and zoning issues in Uzbekistan. The State Committee is currently implementing a project to create a national geographic information system for Uzbekistan, and it is also implementing the "Modernization of Real Property Registration and Cadastre Project" with World Bank support. It could potentially influence improved energy efficiency and climate resilience in rural communities through the promotion of efficient siting and community design.

The **State Committee for Nature Protection (SCNP)** develops and implements the unified nature protection and natural resources saving policy, state control over environment protection, comprehensive inter-agency management of nature protecting activities through wider and primarily application of the corresponding economic approaches and use of natural resources, promoting the nationwide introduction of resources saving, recycling and/or waste-free technologies as well as advanced R&D. It also is responsible for safe and clean environment and its improvements.

[34] Uzhydromet's website is http://www.meteo.uz/eng/

[35] The State Committee's website is http://ygk.uz/uz/pages

Regional and district municipal authorities can play an important role in both planning and in the enforcement of building codes. Local self-governance units; i.e., **Makhallas and Village Citizen Assemblies** (сельский сход граждан), can encourage the adoption of energy-efficient and renewable energy technologies and serve as local informational resources. They also have a vital role to play the integration of climate change considerations into local decision-making.

In addition to the 31 design organizations that are housed in Gosarchitectstroy, there are 817 **private design and engineering companies**. They are located in the City of Tashkent (301), the Republic of Karakalpakstan (28), Tashkent Region (38), Andijan Region (35), Bukhara Region (50), Jizzakh Region (23), Kashkadarya Region (53), Navoi Region (24), Namangan Region (42), Samarkand Region (57), Surkhandarya Region (28), Syrdarya Region (24), Fergana Region (65), and Khorezm Region (49).

Non-state organizations, such as Energy Centre Uzbekistan, the Association of Producers of Renewable Energy, the Chamber of Commerce and Industry of Uzbekistan, and the Institute of Energy and Automation, which operates under the Academy of Sciences, are important in research and market development for energy-efficient and renewable energy technologies. **Other organizations** such as the Ecological Movement of Uzbekistan and the Uzbek Club on Alternative Energy have substantial experience in awareness-raising activities related to sustainable energy.

Project Baseline

The Government of Uzbekistan is planning to increase investment in new rural housing and infrastructure significantly under a new phase of the Rural Housing Programme (RHP), and it has set a target of 79,000 new houses to be constructed by 2020.[36] For the most recent year for which complete statistics are available (2015), the RHP constructed 12,000 houses. In 2014, the most recent year for which complete financial data are available, the government constructed 11,000 houses with a total financial investment of US$ 886 million.

RHP Home Financing

At present, buyers in the Rural Housing Programme pay 22.9% of the cost of the home as a down payment, with 77.1% of the property value covered by the mortgage. The mortgage term for these houses is 15 years. Currently, mortgages carry an average annual interest rate of 7% during the first 5 years and then switch to a different fixed rate that is equal to 90% of the inter-bank interest rate set by the Central Bank;[37] this second rate remains in place during the remaining 10 years of the mortgage. At the outset of the Rural Housing Programme (RHP), mortgages were provided for a 15-year term with a one-year grace period. Starting in 2015, the grace period has been extended to three years. RHP mortgages are capped at an amount that equals 1,000 times the national monthly minimal wage, which implies a cap of US$ 47,100. It should also be noted that mortgages do not cover the purchase of the land, which is provided by the government on the basis of a 49-year lease at no cost to the buyers. Table 5 presents an overview of the current terms of the RHP mortgages:

Table 5: RHP Mortgage Overview

Cost of Standard Home	(USD)	$	61,108

[36] Annual targets are as follows: 13,000 houses in 2016; 15,000 in 2017; 16,000 in 2018; 17,000 in 2019; and 18,000 in 2020.

[37] As of January 2016, this rate is 8.1%.

Percentage Loan to Value	(%)		77.1%
Percentage Downpayment	(%)		22.9%
Mortgage Size	(USD)	$	47,100
Ratio of Minimum Wage	*(x)*		*1,000 x*
Total Downpayment Size (Upfront and at Commissioning)	(USD)	$	14,008
Years 1-5 - Interest Rate	(%)		7.000%
Years 1-3 - Monthly Payment (Interest)	(USD)	$	275
Years 4-5 - Monthly Payment (Principal & Interest)	(USD)	$	484
Years 6-15 - Interest Rate	(%)		8.100%
Years 6-15 - Monthly Payment (Principal & Interest)	(USD)	$	508
Total Interest Payments for 15 Year Mortgage - All 3 Phases	(USD)	$	36,497
Years 1-3 (Grace Period)	*(USD)*	*$*	*10,971*
Years 4-5 (Low Interest Rate)	*(USD)*	*$*	*6,242*
Years 6-15 (Central Bank Linked Interest Rate)	*(USD)*	*$*	*19,285*

Source: CER (2015).

Mortgages are provided based on contracts and on repayment terms, credit-worthiness, collateral, targeted use and duration agreed with borrowers (co-borrowers). These borrowers must meet the following requirements:

- The borrower must be a citizen of the Republic of Uzbekistan living in a rural area who is at least 18 years of age on the day the mortgage application is submitted;
- The borrower has had a permanent job over the previous 12 months, and stable income from his/her private household plots and/or dekhan farm[38] and/or private entrepreneurship activities; and also other sources of incomes that are eligible under current legislation (or that is not banned under the current legislation); and which is sufficient for monthly payments of the mortgage interest rate and payment of the down-payment in accordance with the payment schedule;
- The borrower must have funds for the initial down-payment determined by the RHP;
- The borrower cannot have past-due loans with lending/crediting entities.

The RHP adheres to existing modalities and procedures for permitting and commissioning, and it also must comply with government guidelines on public sector tendering. Under these procedures, each participating provincial municipality establishes a company entitled "Engineering Company on Service of Single Customer." This company is responsible for the implementation of all state-funded programs in a particular province, including the construction of rural houses. Specifically, it is responsible for:

[38] A farm with an area of less than 0.8 hectares.

- management of construction, including tender-based selection of construction companies;
- oversight of construction; and
- financial oversight of funds disbursed to the construction company(ies) selected.

Gosarchitectstroy is the governmental agency in charge of enforcement and monitoring compliance of construction work with mandatory building standards and norms, including the energy efficiency requirements. At building design stage, Gosarchitectstroy reviews the design of the building and certifies its compliance with all mandatory norms. After that, through its territorial divisions Gosarchitectstroy undertakes regular monitoring of construction works (for compliance with approved design) and, finally, issue the closing building permit during commissioning stage certifying compliance of the building with mandatory norms and approved design. If the building does not comply with design and norms, the permit cannot be issued.

As a baseline activity, the RHP represents a highly significant government commitment. Present and future government financial commitments include support for construction, investment, mortgage financing, and rural infrastructure. Mortgage support alone in the RHP will total more than USD 1.5 billion through 2016, and projected investments through 2020 will increase as the number of loans and number of participating banks increase.

Energy Performance of RHP Houses

In 2009, a UNDP-GEF project, "Promoting Energy Efficiency in Public Buildings in Uzbekistan (EEPB)," was launched with the aim of strengthening the energy performance of public buildings and piloting more efficient construction.[39] The project took advantage of the use of standard designs for many public buildings to introduce enhanced materials and design features for new and reconstructed schools and health care facilities. Eight buildings in six climatically diverse regions achieved savings of 40-65% over baseline performance.[40] Based on the performance of these public buildings, Gosarchitectstroy and the Ministry of Economy recommended that UNDP in Uzbekistan assess the potential for energy-efficient rural housing designs that could be used in the RHP, which had been launched the same year.

With the participation of representatives of the Housing Initiative for Eastern Europe (*Initiative Wohnungswirtschaft Osteuropa*, or IWO),[41] the project completed the revision of standard designs of 3-, 4-, and 5-room rural houses, including energy-efficiency measures. In addition, the project decided to design, construct and monitor a highly-efficient "green" rural house in order to assess the potential of a completely new design (rather than modification of an existing standard design) that was intended to maximize energy savings. The resulting rural house included enhanced insulation in walls, roof and basement, and it also utilised efficient heating devices, heat recovery in its ventilation system, and rooftop solar PV and water heating devices. Design work on the building was completed in early 2014, construction completed by January 2015, and initial performance monitoring took place in the subsequent months.

The work conducted by UNDP in Uzbekistan in conjunction with Government partners has led to *three major findings*. First, analysis of the revised designs and the pilot house has indicated that more ambitious building requirements could be introduced in the rural housing sector that would be substantially stricter than existing norms. Energy consumption in typical rural houses could be reduced substantially, and energy security increased, with only marginal increases in investment costs (see Table 6).[42]

[39] EEPB (2015), Project Website, http://beeca.net/en

[40] UNDP (2014). Results of Implementation of Energy-Efficient Solutions in Eight Pilot Buildings.

[41] See http://www.iwoev.org/Landing-Page.211.0.html?&L=1

[42] These calculations are detailed in Annex 9.

Table 6: New Rural Houses in Uzbekistan—Standard vs. Potential Performance

Type of Housing	Annual Energy Consumption (kWh /yr)	Energy/GHG Savings Compared to Standard (%)	Cost of Home (USD)[11]	Cost Differential Compared to Standard (%)[43]
New Standard Home (existing design)	38,557	--	$61,108	--
Energy-Efficient Home (extra insulation)	29,124	*24.5%*	$62,898	*2.9%*
Low-Carbon (EE +RE) Home[44]	28,884	*25.1%*[45]	$64,888	*6.2%*

Source: Estimates compiled from project preparation studies.

Second, the project has identified a further opportunity to shift to low-carbon rural housing: i.e., housing that not only saves energy but also utilizes renewable energy. While renewable energy has both local and global environmental benefits, it is also an important means of improving energy security in rural areas, as it reduces demand for fuel.

Third, while incremental construction costs for energy-efficient and low-carbon houses are low in relation to the energy savings generated, they still represent a significant barrier to investment for potential buyers.

In summary, the work of UNDP in Uzbekistan identified opportunities to shift to energy-efficient and low-carbon rural housing (i.e., housing that takes full advantage of existing energy-saving potential but also incorporates renewable energy systems). Because of the large scale of government-supported housing, current housing designs result in "lost" savings of 2.4 – 2.5 tonnes of CO_2e per house per year when compared to the proposed EE and low-carbon houses constructed by the project. In other words, if all of the RHP houses built in 2014 had been energy-efficient houses, they alone would be generating 25,800 – 27,300 tonnes of CO_2e in GHG reductions each year.

Other Climate Finance Activities

Green Climate Fund (GCF): With support from the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Buildings (BMUB), UNEP, UNDP and the World Resources Institute will be implementing a GCF Readiness Programme. The Programme is expected to offer needs-oriented support to countries for accessing and using the GCF once, it is fully operational, and Uzbekistan has been selected as one of the initial nine target countries in the Programme. Activities will focus on a range of preparatory activities to: a) build and strengthen the institutional capacity of national entities in Uzbekistan, with a focus on enabling direct access; and to b) help Uzbekistan to prepare climate change mitigation and adaptation investment strategies, programmes and projects, including through the active involvement of the private and financial sectors.. The proposed project also targets private sector actors, civil society and financial institutions that will play a key role in the implementation of specific projects, along with civil

[43] Preliminary estimate (varies by number of bedrooms – these numbers assume a 4-room, 3-bedroom house).

[44] The EE house includes the following technologies: insulation for exterior walls, foundation walls, and the attic; and reflectors and thermostatic valves for radiators. The Low-Carbon House also includes a solar PV system for lighting.

[45] The Low-Carbon house is designed to provide additional energy security to rural houses in areas where power blackouts are common.

society actors that may support government in the areas of capacity development, monitoring and accountability.

In addition to general preparatory work, a GCF Concept Note, "De-Risking and Scaling-Up Low-Carbon Housing," was submitted to the Fund in May 2015. The primary objective of the project was to scale up the energy-efficient and low-carbon rural houses to be developed under the proposed UNDP-GEF project by scaling up the green mortgage financing mechanism and possibly introducing an additional financing mechanism to support the purchase and installation of solar PV units in both new and existing rural houses. This project is currently under discussion at the level of the national government.

Other: The idea that evolved into this project concept was originally developed as a Nationally-Appropriate Mitigation Activity (NAMA) Support Project Outline for the efficient housing sector. The Project Outline was endorsed by the Government of Uzbekistan in 2013-2014, and it was submitted twice to the NAMA Facility. However, it did not receive financing.

Annex 3 of this document provides a broader overview of other relevant aid-funded activities and describes potential opportunities and synergies.

Gender Issues

A brief gender analysis is included in this document as Annex 12a. Gender considerations are already closely monitored under the Rural Housing Programme (RHP) that is under implementation. In the framework of its lending to the Rural Housing Programme, the international lending partner, ADB, has established a 30% quota for loans to women. Data on the gender of the applicant is collected when applications for mortgages are registered, and ADB maintains a database jointly with participating commercial banks of borrowers and co-borrowers with gender-disaggregated data. During the period from October 2013 to November 2014, 3,247 (27.1%) of the new targeted mortgages under the Rural Housing Programme were provided to women. Previously, from October 2013 to November 2014, 10,206 (31.7%) mortgage applications under the program were submitted by women from rural areas.[46] It should also be noted that ADB has a gender action plan under implementation that covers houses in the Rural Housing Programme, and the outputs of that plan include gender-enhanced training materials for local governments and informational materials for citizens' associations, which may be consulted in the development of awareness-raising materials.

Conformity with GEF Gender Indicators

Gender analysis reviewed and commissioned during the project has identified areas where appropriate awareness-raising strategies can take into account the differentiated roles of men and women in purchasing and using household fuels. For example, in a household observation in the Khorezm Region, men were responsible for 97% of heating fuel purchases, while cooking fuels were handled differently (one in five women purchased cooking fuel for their households).[47] Component 4 of the project in particular will also be sensitive to different community networks, both formal and informal, that are used by men and women for disseminating information and raising awareness.[48] The **project framework** includes gender-specific activities, such as working to maximize women's participation in capacity-development training in building design. It also includes targets for women's participation, and the project monitoring and evaluation budget

[46] Source: Written correspondence with QQB (June 2015).

[47] Rudenko (2015): 14.

[48] Based on findings in a multi-district observation (UNDP LED Project, 2014: p. 25), the project will also take into consideration the different awareness levels of older and younger women regarding renewable energy options when developing outreach strategies and materials.

supports the collection of gender-disaggregated data. In addition, the project will monitor the **share of women and men who are direct project beneficiaries**, and it will also monitor the nature of these benefits. Finally, project targets and activities will be monitored in **project reporting**, both in annual reports and in the mid-term evaluation and the terminal evaluation.

The project concept and proposed activities have been reviewed by a UNDP gender specialist, and the Atlas gender marker for this project is 1.

Barriers

Rural development in Uzbekistan has reached an important branch point. Investments in new housing without considering energy and climate concerns would improve living standards in the short-term, but they would lock in high levels of greenhouse gas emissions and make homeowners vulnerable to increases in energy tariffs, which are currently rising at approximately 15% annually.

However, affordability is the principal barrier hindering demand for energy-efficient and low-carbon housing: increased upfront costs and higher monthly mortgage payments can act as a disincentive and can be difficult for rural households to afford. Therefore, additional support is required to transform the real-estate market towards low-carbon housing and achieve substantial energy savings and GHG emission reductions within the framework of the RHP.

Other significant barriers include: a lack of strict energy performance standards that could stimulate the demand for efficient housing; tariffs for fuel and power that are increasing but still relatively low; and long payback periods for home-owners investing in energy-saving appliances. Furthermore, a survey of rural residents found very low levels of awareness regarding energy efficiency in the housing sector. For example, 85% of households in a 2015 survey reported that they were not well informed about energy efficiency measures and were therefore unwilling to invest in them.[49] There were also several indications that households lacked the information to make decisions that could reduce energy consumption. For example, 89% of households in the 2015 survey believed that it was best to replace a boiler only when it stopped working altogether rather than replacing it after its suggested lifetime, and 65% of households reported opening windows on warm winter days rather than turning down gas-fired boilers.[50]

A summary of the key barriers identified in the course of the situation analysis is presented in Table 7.

Table 7: Barriers to a Low-Carbon Rural Housing Market in Uzbekistan

Type of Barrier	**Description of Barrier**
Policy/ Regulatory	Land-use policies and regulations do not take into account low-carbon requirements. Current residential codes for rural housing are weak due to the relatively low priority of the sector in previous years, and construction practices are largely *ad hoc*.
Market-related	Domestic manufacturers may not be aware of opportunities in low-carbon construction materials and technologies due to a lack of experience in that sector (in which there was previously no real demand). Lack of experience with low-

[49] CER (2014): 14.

[50] Ibid.

	carbon technologies and approaches, as those technologies are primarily imports and may not be known to potential customers.
Financial	Higher up-front cost of low-carbon housing units compared to previous designs without insulation, efficient windows, efficient appliances, renewable energy applications. High interest rates for mortgages due to competition for investment funds with other sectors in a period of economic growth. Tariffs for fuel and power are below market rate, so when consumers save energy, they do not realize the full economic savings resulting from their actions. Therefore, they have less motivation to reduce fuel and power consumption (and invest in energy-saving measures and renewable resources).
Awareness	Low awareness of potential benefits (and savings in operating costs) of more efficient houses among nearly all stakeholders (government, private sector, and rural residents) stemming from the prevalent practice of *ad hoc* rural housing construction in previous years using unfired clay brick. Low-carbon technologies unfamiliar to potential manufacturers, distributers, and customers in the construction sector due to the lack of a market among this group in previous years. Low awareness of climate-related issues in rural land use planning and zoning as plans have focused primarily on urban heat supply in the past.
Capacity	Lack of capacity and knowledge to identify, plan and implement low-carbon solutions for rural settlements (e.g. how to plan and build a village with low carbon footprint, which technology to use, how to build and operate such buildings and technologies, etc.). Lack of capacity to incorporate climate change considerations into local development in rural areas due to lack of experience and the relative recent emergence of these techniques. Lack of capacity to conduct design and site checks and to enforce the newer, stricter residential building codes that will come into force during the project implementation period.

II. STRATEGY

Project Approach

Rationale

There are compelling reasons to focus on low-carbon rural settlements from an economic, social, and environmental standpoint. However, it should also be noted that the rural housing issue provides an entry point into low-carbon rural development that is unique. While the housing units themselves can be constructed as low-carbon buildings that utilize energy efficiency and renewable energy technologies, the construction of entire housing developments also presents an opportunity to address local infrastructure and planning issues.

Given the high rate of private home ownership, rural settlements also provide a solid entry point for the introduction of a mortgage financing mechanism. The use of GEF funds for non-grant financing mechanisms would leverage substantial government investments in the housing sector and develop an innovative product that could be replicated broadly in Uzbekistan and in other countries.

Finally, low-carbon rural housing presents an opportunity to address climate change threats to rural populations in Uzbekistan. Projected climate threats include increased air temperature, changing rainfall patterns (and increased drought frequency), and an increase in extreme events, such as heat waves.[51] Well-constructed rural housing that provides a comfortable indoor climate for residents and affordable heating and cooling options directly reduces exposure to these climate threats. Furthermore, housing improvements in resource efficiency could reduce energy and water use, easing the acute stress on diminishing water resources and reducing utility expenditures for households--both steps that would also reduce vulnerability to climate change.

Due to the presence of market and non-market barriers, the overall risk profile of energy-efficient construction deters private investment despite the presence of vast – but hitherto untapped – potential for highly cost-effective opportunities to save energy and reduce GHG emissions. The proposed project for Uzbekistan is designed to comprehensively address these barriers via a combination of policy and financial de-risking instruments and targeted financial incentives to key market players, such as homeowners.[52] A detailed Theory of Change for the project is provided under Annex 9 of this document.

Areas of Activity

The project includes country-level activities, such as strengthening energy performance standards in building codes, but the construction of EE and Low-Carbon homes is by nature site-specific. There are several criteria for the location of project activities: 1) The locations should be in areas where the Rural Housing Programme is active and where rural settlements will be constructed during the project implementation period; and 2) the locations should allow the project to pilot energy-efficient and renewable energy features in areas that reflect different aspects of Uzbekistan's varied climatic conditions, which have a significant impact on heating and cooling needs;[53] and 3) the locations should be varied in order to test the performance of a variety locally-sourced construction materials. Other considerations, such as energy

[51] Source: UNDP-GEF 2014.
[52] For more information on UNDP's de-risking work, please visit www.undp.org/DREI.
[53] See Annex 10 for a description of these climate regions.

resource issues, have also been taken into consideration. Pilot areas for the green mortgages (and the EE and low-carbon homes built with this financing) are summarized in Table 8.

Table 8: Overview of proposed pilot areas

Location	**Population**	**Area (km^2)**	**Climate Zone for Construction**	**Reason for Selection**
Tashkent Region	4,450,000	15,300	Zones Ib, II, and III	Varied climate conditions, proximity to Tashkent, synergies with Local Governance Support Programme (Tashkent Region). Ongoing RHP construction.
Ferghana Valley	3,386,500	6,800	Zone II	Relatively moderate climate but in need of energy resources. Agricultural economy could provide opportunities for bioenergy.
Khorezm Region	1,200,000	6,300	Zones I.A and I.C	Sunny climate zone featuring extended periods of high heat in the summer but also cold winter temperatures.
Bukhara Region	1,543,900	39,400	Zones I.A and I.B	Arid, continental climate zone with an extended period of extreme heat in the summers and high dust levels. Variety of indigenous raw materials for construction. Rural economy, ongoing RHP construction.
Jizzakh Region	910,500	20,500	Zones I.B, II, and III	Varied climate conditions. Predominantly agricultural with extensive irrigation.

Project Objectives

The **objective** of the proposed project is to provide Uzbekistan's rural population with improved, affordable and environmentally friendly living conditions. The total project size is estimated at approximately USD 136.7 million, with a proposed GEF/CCM contribution of USD 6 million. The project design builds directly on previous and on-going experience with sustainable, low-carbon and climate-resilient local development in Uzbekistan. Specifically, the project is designed to lower the energy intensity trajectory of Uzbekistan by building in lower energy demand in new rural homes.

The proposed project consists of four inter-linked outcomes. They relate to introducing a green mortgage scheme for rural housing (Outcome 1), strengthening domestic supply chain and the capacity to design and construct efficient and low-carbon housing (Outcome 2), strengthening policies and regulations, particularly building codes for rural housing and rural settlements (Outcome 3), and raising public awareness about benefits and advantages of energy-efficient and low-carbon housing (Outcome 4).

By achieving these outcomes, the project will create a favorable market environment and scalable business model for investment in both energy-efficient and low-carbon rural. The implementation of this model will lead to sizable energy savings and accompanying GHG emissions: it will reduce energy consumption directly by 8,266,185 GJ and corresponding emissions by approximately 463,894 tCO_2e over a 20-year investment lifetime. In addition, the project will result in an estimated indirect reduction of GHG emissions of 891,925 tCO_2e - 4.7 million tCO_2e over a 20-year investment lifetime.[54] At the same time, the project will bring social benefits in the form of increased comfort to rural residents and improved air quality. Finally, the project will catalyse more than US$ 123 million in additional private and public sector financing.

Description of Project Outputs and Activities[55]

Component 1: Green mortgage market mechanism to scale-up demand for low-carbon housing

Under this component, the project will work in partnership with national financial institutions, primarily Qishloq Qurilish Bank, to provide access to affordable financing for rural houses that produce fewer greenhouse gas emissions than current new rural housing stock. At present, commercial mortgages outside of the RHP have annual interest rates of 16-18%. Rural mortgages under the RHP, while more favourable than standard commercial loans, do not encourage the purchase of homes with energy-saving or renewable features that reduce greenhouse gas emissions, and consumer awareness about potential savings is too low to generate demand for these homes.

To address this situation, Component 1 will support the capitalisation of a ***green mortgage*** scheme for Uzbekistan. The term "green mortgage" is generally defined as financing that allows homebuyers to borrow extra money for items that save energy and/or reduce GHG emissions. In this case, the green mortgage mechanism will initially allow homeowners to purchase homes that reduce energy consumption and GHG emissions under the existing mortgage cap without having to increase their down payment. The project will use commercial banks participating in the Rural Housing Programme to offer favorable mortgage terms for houses that meet a higher standard of energy performance. Funds from the GEF will be used to pilot approximately 1,588 mortgages that incentivize demand for *energy efficient (EE)* and *low-carbon* houses[56] by subsidizing incremental costs to bring down payments or monthly payments to the same level as those for standard mortgages.

The sequence of steps under the Green Mortgage program will be as follows:

1. The house design is approved by Gosarchitectstroy as eligible
2. A mortgage application is submitted and approved
3. The house is built; inspection and commissioning confirm compliance with eligibility rules.
4. An energy performance label is applied to the house
5. Energy performance is monitored by the project and used to inform the design requirements

The subsidy will aim for a mix in the pilot mortgage houses of 95% EE houses and 5% Low-Carbon houses.[57] It should be noted that this example is illustrative, and the specific terms of the mortgages and

[54] For a complete explanation of assumptions and methodology, see Annex 11.

[55] The GEF terms "Output" and "Activity" are equivalent to the UNDP terms "Activity Result" and "Action," respectively.

[56] The terms energy efficient (EE) and low-carbon for the purposes of this project are defined under the description of Component 2 of this project.

[57] This mix was chosen due to the higher relative cost-effectiveness of the EE house, which would allow the project to cover a larger number of pilot houses. However, consultations during the project preparation period have indicated that there may be strong interest in the Low-Carbon house, because the solar PV unit would ensure a stable supply of electricity.

cost and energy performance of the houses that will ultimately be constructed under the project may vary due to a variety of technical and economic factors. The initial phase of the pilot mortgages (e.g. for houses constructed in 2018) will be implemented in two of the five pre-selected areas in Uzbekistan listed in Table 8, and with their further replication in the remaining ones during 2019-2021.

The terms as described represent the most feasible and efficient means of designing the scheme as envisioned at present given market conditions in Uzbekistan. Under current estimates, the GEF investment contribution is likely to be used to offset up-front costs of the mortgages for the following reasons: 1) The use of GEF funding for an interest rate subsidy would be more complex from a legal and administrative perspective for 15-year loan terms; and 2) current down payments are based on what homebuyers are able to afford; 3) research conducted during the project preparation period indicates that there is not market interest in purchasing more expensive houses, even when these homes may save the buyers money; 4) the "extended credit" mechanism that some North American EE mortgages use would be very difficult to implement in Uzbekistan, because RHP mortgages are capped by law at a maximum amount of 1,000 monthly minimum wages, and because homebuyers have not expressed interest in taking on additional credit. However, the project will monitor in-country conditions closely during implementation in order to develop the option of an interest rate subsidy if feasible.

Overall, the design of the green mortgage scheme follows the model of a successful green mortgage mechanism, Mexico's *Infonavit* green mortgage mechanism,[58] and other programs to promote the adoption of efficient and renewable energy technologies in the residential sector. As in the "Passive House" initiative of the INFONAVIT program, direct financial incentives will likely be used to remove the incremental cost of the mortgages for homebuyers, creating demand for homes with lower GHG emissions. The provision of technical and financial advisory support that will accompany the loans is based on findings from several green mortgage studies that identified the importance of strong "soft" support to homeowners throughout the process with paperwork and certification in order to encourage these loans.[59]

It should be noted that the cost of the full green mortgage scheme is expected to fall over time. As designs are optimized and benefits from economies of scale are realized, the costs associated with installing efficient materials and technologies in houses will decrease. In addition, banks will obtain better data on the performance of EE and low-carbon houses over time, which will lower their risks and their subsequent financing costs. Furthermore, the savings accruing to homebuyers will increase as fuel prices rise, and the awareness of homebuyers regarding the economic advantages of these houses will also increase due to outreach efforts. These cost reductions should allow for the government subsidy to be phased out over time. Finally, analysis under the project will raise awareness among government decision-makers about the economic benefits of the scheme that accrue to the energy sector.

The appraisal of the EE and low-carbon houses will be undertaken as part of regular Government procedures to oversee the implementation of the RHP, whereby the State Committee for Architecture and Construction (Gosarchitectstroy), through its territorial divisions, will monitor and report on construction works and issue building permits at the commissioning stage, certifying compliance of each building with the EE or low-carbon design. This is the approach already taken for standard mortgages that have been provided by QQB to date under the RHP. Given that this scheme involves new construction, the appraisal valuation of the homes will be made using information provided by Gosarchitectstroy, typically taking a cost-basis approach (value of land and original construction materials) and reflecting the standard, publicly available pricing for homes under the RHP. Only houses with appropriate closing permits issued by Gosarchitectstroy will be eligible for sales under the Green Mortgage Scheme.

[58] Wehner (2012), "Case Study: Mexican Housing NAMA Finance" https://www.fisglobal.com/ucmprdpub/groups/public_searchable/documents/document/c030216.pdf
[59] Such as Kolstad (2014).

As noted above, activities under Component 1 will also provide technical assistance to local commercial banks in the form of training and promotional materials to develop their products, appraise investments and process a pipeline of green mortgages. As the project progresses, information about green mortgages will be disseminated to potential borrowers using targeted marketing through selected outlets, including local events, citizens' associations, and a training center through activities under Output 4.2 of this project.

Overview of Financing for Component 1

With the USD 3 million allocated from GEF investment funds, it is estimated that this pilot can cover up to 1,588 green mortgages.[60] GEF funding under this output will be used to cover part of the incremental cost of the scheme as compared to regular cost of RHP mortgages.

As Table 9 illustrates, the initial launch phase of the scheme will generate significant co-financing for green housing. It is estimated that the GEF's USD 3 million will leverage a total of more than USD 97 million in spending, composed of approximately USD 22 million in consumer equity (in the form of down payments) and USD 75 million in mortgage financing provided by participating RHP banks (QQB, Ipoteka, NBU).

Table 9: Estimated co-financing from the initial launch of 1,588 green mortgages (USD)

Component of Co-Financing	USD
Co-Financing for EE Houses	
Homeowner Down Payments	21,116,542
Bank-Provided Mortgages	71,095,431
Total for EE Houses	92,211,973
Co-Financing for Low-Carbon Houses	
Homeowner Down Payments	1,105,505
Bank-Provided Mortgages	3,722,027
Total for Low-Carbon Houses	4,827,532
Total Co-Financing for Houses	**97,039,505**

Summary of Activities, Outputs and Outcomes under Component 1

Outcome 1.1: Green mortgage scheme is in place and provides incentives to homebuyers to invest in houses that feature low-carbon design and technologies

Output 1.1: Green mortgage scheme designed and launched

Activities

[60] This number assumes that the GEF investment contribution consists of an up-front subsidy of the incremental costs of the mortgage, or USD 1,790 for the EE house and USD 3,780 for the Low-Carbon house, covering approximately 1,509 EE houses and 79 Low-Carbon houses, respectively.

1.1.1 Meet with financial institutions and regulators to determine acceptable terms and conditions for the green mortgage scheme.

1.1.2 Launch the scheme with a participating bank or banks and market to existing RHP customers

1.1.3 Monitor uptake and loan performance

1.1.4 Modify terms and conditions as necessary

Outcome 1.2: Financial institutions have capacity to design and operate dedicated financial products for low-carbon housing

Output 1.2: Training and support in due diligence and green mortgage lending provided to financial institutions and government regulators

Activities:

1.2.1 Conduct a training needs assessment for the residential lending sector

1.2.2 Work with international experts to develop a training curriculum

1.2.3 Provide training to financial institutions and government regulators

1.2.4 Design and conduct a study tour of selected green mortgage programs for government and bank officials in order to familiarize them with green mortgage marketing and procedures.

1.2.5 Establish a system for "on-call" expert assistance to bank branches issuing green mortgages

1.2.6 Gather feedback after first loan season and update and modify training and on-call assistance as necessary

1.2.7 Produce knowledge products that support uptake of the green mortgage mechanism: 1) a green mortgage operational manual for bankers; 2) a green mortgage handbook for policy-makers; and 3) a green mortgage brochure for RHP mortgage applicants

Component 2: Efficient designs and domestic supply chains for low-carbon housing and settlements

Component 2 is designed to facilitate implementation of the financial market scheme in Component 1 by finalizing prototype designs for EE and low-carbon houses, pilot testing a low-cost, nearly-zero energy house, strengthening domestic supply chain and manufacturing capacities for design and construction of low carbon housing and settlements, and, more broadly, promoting the application of a wide range of low-carbon technologies and approaches in the planning and construction of new rural settlements.

Component 2 will focus on three types of new single-family residential houses for rural areas:

- *Energy-efficient (EE) houses* will feature an array of cost-effective EE solutions that may include better insulation for external walls and foundation walls; more efficient window placement; and the use of thermostatic valves and heat reflectors for radiators. These EE houses are approximately 2.9% more expensive than standard RHP houses, but they will reduce annual energy use by an estimated 24.5%.
- *Low-carbon houses* will include all of the EE home features, but they will also include a solar PV system to meet lighting needs. These low-carbon houses are approximately 6.2% more expensive than current standard RHP houses, but they will reduce energy consumption by 25.1% and offer a reliable supply of power that is independent from the electricity grid.[61]

[61] Estimates have been made based on a 4-room with a total floor area of 162 m^2. Detailed cost calculations and performance estimates for the measures are provided in Annex 10, and a review of pilot testing of EE and renewable measures for a green rural house has also been submitted. These estimates are illustrative, and it is possible that the final versions of the buildings as approved by the government may be slightly different.

- *Nearly-Zero Energy Houses*[62] will incorporate elements of passive design and will test both technologies, materials, and design principles. These houses will not initially be included in the mortgage, and their appearance may differ from the current standard RHP house. The design team will also aim to make the nearly-zero energy house a low-cost house compared to standard RHP houses.

Eventually, the project envisions a shift to using a performance standard related to energy consumption or GHG emissions for these designations rather than a specific checklist of technologies. This shift will allow builders to take advantage of the most cost-effective techniques available in a particular region or at a particular site, allowing them to incorporate local materials and techniques. However, for the initial construction phase, government partners have expressed a preference for a standard list of technologies for purposes of consistency and ease of measurement, comparison, and management (e.g. procurement and tendering). In collaboration with the organization Qishloq Qurilish Loyiha (QQL, or Rural Housing Design), the project will finalize the existing, available designs for the prototype EE and Low-Carbon RHP houses. QQL will also work with the project to design and construct a pilot nearly-zero energy house.

In addition to promoting efficient and low-carbon housing, the project will support domestic manufacturers of technologies and materials identified to further promote their products and strengthen domestic manufacturing capacity and the existing marketing and distribution network. The variety of energy-efficient construction materials and building-level renewable energy equipment has increased substantially in Uzbekistan over the past decade,[63] but prices and availability vary widely across regions and there is still a need to encourage market development. Availability of supply will become very important as demand for EE materials and equipment increase due both to the EE and Low-Carbon homes entering the market, but also to the broader minimum energy performance standards for all other houses.

Specifically, the project will identify a short-list of high-priority EE and RE technologies for which a market study will be conducted. Finally, the project will survey international good practice and current practice in Uzbekistan to develop supply chain analysis for EE/RE products and services and provide recommendations to suppliers and the Government.

Furthermore, the project will support the identification and promotion of the materials, technologies, and techniques for low-carbon housing through the Rural Technology Needs Assessment.[64] The only technology needs assessment conducted in Uzbekistan was completed in 2001, and it is now very out-dated. The TNA under this output will identify a series of environmentally and economically feasible technological solutions for energy/water/sanitation systems in rural housing and community infrastructure. Its compilation will involve stakeholders at all levels of government and in the private and non-governmental sectors to assess and prioritise technology needs in rural areas.

Summary of Activities, Outputs and Outcomes under Component 2

[62] A "nearly zero-energy building" is defined here as "a building that has a very high energy performance. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby" (Article 2, EU Energy Performance in Buildings Directive Re-Cast). See http://www.epbd-ca.eu/themes/nearly-zero-energy for more information.

[63] See UNDP (2014), *Results of Implementation of Energy-Efficient Solutions in Eight Pilot Buildings*.

[64] Sectoral TNA reports internationally have addressed the buildings and agriculture sectors, which will both be important components of this TNA. See www.unepdtu.org/-/.../TNA%20Project%20Publications%20flyer%20(1).pdf

Outcome 2.1: Energy-efficient and low-carbon housing designs are finalized, and a low-cost Nearly-Zero Energy house is demonstrated

Output 2.1: Prototype EE and low-carbon designs for rural houses and settlements finalized and Nearly-Zero Energy house demonstrated

Activities:

2.1.1 In conjunction with Qishloq Qurilish Loyiha, finalize EE house, Low-Carbon house, and Nearly-Zero Energy house designs and assessments of estimated cost and energy performance

2.1.2 In conjunction with Gosarchitectstroy, finalize the participation of the pilot municipalities in the construction of EE and Low-Carbon houses and ensure that both the participating houses and a control group of baseline houses are equipped to be monitored for fuel supply, energy consumption, and indoor air temperature and humidity.

2.1.4 On the basis of data collected on energy performance (see section below on Monitoring and Evaluation), provide performance certificates for baseline and green mortgage buildings and issue energy labels for these buildings.

Outcome 2.2: Rural developers, homebuilders, and homeowners have improved access to EE and RE technologies

Output 2.2: Domestic supply chain and capacities for design and construction of low-carbon housing strengthened

Specifically, the project will identify a short-list of high-priority EE and RE technologies for which a market study will be conducted. The project will then conduct market studies and supply chain analyses for EE/RE products and services and provide recommendations to suppliers and the Government.

Activities:

2.2.1 Conduct a technology needs assessment (TNA) for rural houses and community infrastructure

2.2.2 Identify a short list of high-priority EE and RE technologies from the TNA

2.2.3 Conduct a market study for the technologies identified in Activity 2.2.2 and produce a report including an assessment of the state of the market, an actor analysis and mapping of actors, a supply chain analysis (including the analysis of potential sister supply chains), and an assessment of market barriers for these high-priority technologies

2.2.4 Provide specific recommendations to the Government on technology promotion in the context of its Roadmap for Increasing Energy Efficiency for 2015-2019

2.2.5 Provide targeted advisory support to suppliers as necessary

Component 3: Policy and regulatory reform to enable the scale-up of low-carbon housing and settlements

The focus of Component 3 is on strengthening and enforcing minimum energy performance standards (MEPS) as more rigorous energy performance standards are introduced into construction codes for new rural housing. Gosarchitectstroy, the national implementing partner, has received a mandate from the Government to prepare periodic revisions of building codes every five years. The next stage of code revision to be undertaken by Gosarchitectstroy will take place in 2017-2019 and will cover residential buildings. The project will work closely with Gosarchitectstroy and provide required technical assistance and support in order to ensure that scheduled revision of the codes include more stringent energy use requirements in line with EU Building Performance Directive. The seven building codes that have been

identified for revision and strengthening are listed and described in the "Building Codes" section of Annex 10 of this document.

This component will also focus on strengthening monitoring and enforcement systems to ensure compliance with EE/Low-carbon standards and new building codes to be introduced in 2017-2019. In particular it will support its partner for this component, Gosarchitectstroy and its territorial divisions, to undertake appraisals under the Green Mortgage Scheme; i.e., to monitor and report on compliance of the EE and Low-Carbon houses with their designs and performance estimates. Building code enforcement in Uzbekistan is a multi-stage process that involves design review, oversight over the actual construction process, and final approval of the building at its commission stage. Within Gosarchitectstroy, the Department of Monitoring of Activity of Design Organizations (known by its Russian initials as UMDPO), is responsible for all stages of building code enforcement. The project will work with UMDPO and its regional branches to conduct a capacity gap assessment and to devise and implement comprehensive capacity building strategy.

By the end of the project, Gosarchitectstroy and its regional branches will need to have sufficient capacities to effectively undertake their appraisal function under the Green Mortgage Scheme, including:

- methodology and guidance on how to check compliance of EE and Low-Carbon houses with design requirements at building construction and commissioning stage;
- an on-the-job training program for Gosarchitectstroy staff to carry out compliance checks in line with developed methodology;
- an energy performance database to collect and store information about the buildings constructed, any certifications issued, compliance rate, etc.;

Finally, the project will provide assistance under this component to test new approaches to spatial planning; i.e., incorporating principles of environmentally sustainable design, climate resilience and resource efficiency. Under the Presidential Resolution on the RHP, Gosarchitectstroy developed and introduced a new code entitled "Architecture-Planning Organization of Territories in Rural Areas" (APOT). Currently, siting regulations can result in settlements where houses consume significantly more energy than necessary.[65] Training under this sub-component will target the following groups: regional municipalities and their district branches; the Qishloq Qurilish Loyiha Design and Survey Institute; the Qishloq Qurilish Invest Engineering Company; and the departments of the State Committee for Land Resources, Geodesy, Cartography and State Cadastre, which is responsible for land-use planning; and the Housing and Utilities Unit of the Ministry of Economy.

Summary of Activities, Outputs and Outcomes under Component 3

Outcome 3.1: Appropriate policy and regulations, such as strengthened building codes, are in place to enable scaled-up construction of low-carbon housing and settlements

Output 3.1: Building codes[66] for new rural housing strengthened.

Activities:

[65] For example, housing facades are required to be constructed directly facing the road in front of the property, and roads may be inadvertently built at an angle that minimizes incident solar radiation, making solar PV panels less effective and decreasing potential energy gains from shading and other design features. See Chapter 4 of Harvey (2013), *Energy and the New Reality I: Energy Efficiency and the Demand for Energy Services*: 115-246.

[66] The building codes targeted in this project only cover residential buildings, as public buildings have been updated and strengthened under a recent UNDP-GEF project.

3.1.1 Convene stakeholders and develop a road map for strengthening the codes for new rural residential buildings
3.1.2 Develop a roadmap for the adoption of standards and/or certification of EE, Low-Carbon, and Nearly Zero-Energy residential buildings or another relevant designation for low-emissions buildings.
3.1.3 Compile technical recommendations for the strengthened codes, agree on targets (taking various climatic zones, availability of construction materials and cost-effectiveness considerations into account), and undertake any additional work necessary to develop the proposed MEPS
3.1.4 Submit recommendations in the form of draft codes and any other relevant designation that certifies energy performance exceeding the codes to Gosarchitectstroy
3.1.5 Undertake any revisions or modifications necessary based on feedback and submit final proposed codes and other designations to Gosarchitectstroy
3.1.6 Develop and submit recommendations on a "nearly zero-energy building" designation.

Outcome 3.2: Gosarchitectstroy and its territorial divisions have the capacity to appraise standard EE/low-carbon home design under the green mortgage scheme and ensure compliance with new building codes and the minimum energy performance standards in them.

Output 3.2: Gosarchitectstroy staff organized and trained in a way that allows the agency to appraise energy-efficient designs for residential buildings and enforce compliance of all residential buildings with strengthened building codes.

Activities:
3.2.1 Review functional responsibilities of UMDPO and its regional branches in building code enforcement
3.2.2 Conduct a training needs assessment and stocktaking of lessons learned from previous training provided in the public buildings sector
3.2.3 Make specific recommendations to Gosarchitectstroy on the organization of building codes enforcement
3.2.4 Provide management training on new roles and responsibilities
3.2.5 Define the process of technical training and credentialing UMDPO staff
3.2.6 Develop and launch a training-of-trainers programme for in-service training on strengthened thermal performance requirements and code compliance and building certification/labelling for inspectors and architects from design agencies.
3.2.7 Develop, draft, publish, and disseminate official guidance manuals on energy-efficient design solutions, calculation methods (including spreadsheet-based software for calculating building energy performance, and interpretation of the code.
3.2.8 Deliver in-service training for UMDPO staff on design reviews, site checks, commissioning procedures, and operational features of efficient buildings
3.2.9 Delivery of seminars for architects and engineers on EE design, construction, and the content of revised codes
3.2.10 Provision of material support for UMDPO, in particular its regional branches, including procurement of required software for the calculation of technical parameters of EE buildings and hardware, such as infrared imaging equipment
3.2.11 Enhancement of linkages with other Gosarchitectstroy departments through ongoing communication and regular meetings

Outcome 3.3: Territorial planning incorporates efficient resource use and climate considerations.

Output 3.3: Territorial planning[67] improved to maximize efficient resource use and incorporate local climate considerations.

Activities:

3.3.1 Conduct a detailed regulatory analysis of master plans and APOTs in participating rural areas to identify specific barriers to the use of efficient siting for rural communities

3.3.2 Select a pilot community from among the housing developments to be constructed under the RHP and propose and implement innovative approaches to settlement planning in the preparation of the APOT

3.3.3 Develop specific recommendations on siting to maximise efficient resource use in rural areas and on any legal or regulatory changes necessary to enable these gains

3.3.4 Provide training and capacity strengthening for at least five land-use planning officials in the central office of the State Committee on Land Resources, Geodesy, Cartography and National Cadastre and at least one staff member in each of its 14 regional offices on rural land-use practice that is sensitive to climate change considerations and encourages minimizing GHG emissions.

Component 4: Marketing and promotion of low-carbon rural housing and settlements

Component 4 will help boost public demand for green mortgages and confidence in energy efficient and low-carbon housing via a series of outreach and awareness-raising activities at the national and local level. Research conducted during the compilation of the project concept and project document found that while rural families may spend nearly half of their monthly income on household utilities,[68] they are not aware of the possibility of using EE measures to reduce their monthly bills. In addition, it will draw upon positive UNDP experiences in Central Asia with rural educational centers to establish a training center for sustainable energy in a community in one of the participating regions.[69]

In these regions, the project will engage a number of local NGOs, community-based organizations and vocational training centers to reach out and advocate for the benefits of energy efficiency and renewable measures for new and existing housing. While local partners will be able to provide information on the EE/Low-carbon homes to the surrounding population, they will also be able to advise homeowners on various type of materials and technologies that can be used outside of the green mortgage scheme. In addition, the project will work with participating banks to ensue that information about the Green Mortgage Scheme is made available to all potential borrowers when they approach the bank for loan.

Additionally, this awareness-raising work presents a unique opportunity to link the project's climate change mitigation activities with on-going development efforts supported by UNDP to strengthen the effectiveness of local governance and citizen participation in local planning in Uzbekistan, and by its work more broadly on sustainable local development (SLD).[70] The development of this output has been informed by UNDP experience in working with local communities in Central Asia on self-assessments and planning for SLD and because village-level energy solutions can lead to greater efficiency gains and yield more opportunities for renewable energy generation and utilisation than a building-by-building approach. In addition,

[67] In this context, territorial planning refers both to planning documents and to norms and standards that cover the allocation and orientation of rural residential houses.

[68] Rudenko (2015) estimates a total of 6,000m^3 per year for gas alone, totaling 1,254,000 UZS at the current residential price of 209 UZS per m^3.

[69] A 2009 IEA report on renewable energy in towns and ities found that training centers served several purposes: educating citizens, attracting outside attention, and creating a "critical mass of skilled personnel." Source: IEA (2009):16.

[70] UNDP (2013) *Programming Sustainable Local Development: A Handbook for Eastern Europe and Central Asia.* More information on Sustainable Local Development is available at http://www.scribd.com/doc/192730866/Self-assessing-Sustainable-Local-Development-A-Tool-for-Eastern-Europe-and-Central-Asia#download .

stakeholders throughout the consultation process have identified potential gains from village-level energy solutions in rural areas, such as biogas, drip irrigation (which reduces energy demand for water pumping), and efficient street lighting.

Training and capacity strengthening activities will be developed to strengthen the capacity of these stakeholders in selected regions to incorporate climate change and sustainability considerations and specific targets (e.g. renewable energy use, waste minimization, etc.) into local development in rural areas. Activities will also introduce strategies to increase the sustainability of energy and water supplies in rural settlements. Furthermore, this component will also include activities to initiate the participation of citizens in low-carbon planning for selected rural settlements, a process that will raise awareness of the potential for mitigation at the local level and will support the development of plans that are inclusive.

Summary of Activities, Outputs and Outcomes under Component 4

Outcome 4.1: Rural homebuyers are aware of the benefits and advantages of low-carbon housing

Output 4.1: Awareness-raising and outreach provided to homebuyers and other residential energy consumers in pilot project region

Outreach activities will be designed to raise awareness of the financial mechanism developed by the project to support low-carbon houses and efficient appliances and lighting and thus generate demand for those products and services. They may also include training and education for rural residents on how to use/apply/build affordable low-carbon solutions for their homes and for sustainable solutions in the water supply and treatment and waste (and possibly agriculture) sectors.

Activities:

4.1.1 Conduct a capacity needs assessment, including a baseline survey of awareness among rural homebuyers and other rural residential energy consumers
4.1.2 Develop communications and partnership strategy
4.1.3 Develop and disseminate outreach publications and other media products (e.g. radio spots), including fact sheets for the rural resource centers created under Activity 4.1.4.
4.1.4 Create three rural resource centers at regional Gosarchitectstroy offices to showcase EE and renewable technologies, working closely with project staff and consultants to use the centers to support training and outreach
4.1.5 Provide training on outreach related to the EE and Low-Carbon houses to banks and government agencies

Outcome 4.2: National and sub-national stakeholders are aware of and able to incorporate climate considerations and energy management into decision-making

Output 4.2: Selected regional and district governments and other sub-national organizations trained in mainstreaming climate change in planning, decision-making, and budgeting.

Activities:

4.2.1 Select pilot districts where the RHP is will be constructing houses for participation in SLD training
4.2.2 Consult with stakeholders and beneficiaries to determine priorities for training
4.2.3 Customize a training curriculum and produce a training manual based on SLD approaches used in Central Asia
4.2.4 Deliver training in 12 regions (with the exact number of settlements in each region to be determined in agreement with regional governments)

4.2.5 Develop a strategy for replicating to other settlements in participating districts and other districts and provide this strategy in the form of a written proposal to government policy-makers and other donors

4.2.6 Provide recommendations to the government on introducing best practices for settlements through national policies/legislation/regulations.

Monitoring and evaluation (M&E)

In addition to the activities mentioned in specific project components, the project will carry out continuous monitoring and periodic evaluation as described in **Section IV: Management Arrangements** under the sub-section entitled "Monitoring Framework and Evaluation." This sub-section describes the M&E framework, the budget and timeline for M&E activities, and a description of M&E issues specific to energy efficiency projects.

The project team will be responsible for overseeing monitoring at the project objective level and at the component level. It will monitor progress in three areas: 1) GEF objectives and targets, which are recorded in the GEF Climate Change Tracking Tool; 2) UNDP outputs, which link to the Country Programme Action Plan; and 3) project-specific outputs and targets that capture the progress of the project towards its outputs and objectives. These three areas are presented in a single logical framework in **Section III: Project Results Framework**.

Activities:

In addition to outcome/objective-level monitoring, crosscutting themes in M&E activities will include monitoring and understanding other local benefits, such as beneficiary satisfaction, indoor air quality, and gender-specific distribution of benefits.

ME 0.1: Monitor energy and climate indicators as per the GEF Climate Change Tracking Sheet

ME 0.2: Monitor development partnerships as per the UNDP CPAP outcome indicator

ME 0.3: Measure and monitor satisfaction of the occupants of green mortgage houses relative to control houses in the RHP program.

ME 0.4: Assess other benefits (social, economic, health, environmental) of the EE and low-carbon houses

ME 0.5: Monitor women's participation and assess the impact of gender on project benefits

For the green mortgage mechanism under Component 1, the project will monitor the volume of investment leveraged in the EE and Low-Carbon homes, the number of loans that made, and data on the percentage of loans made to women.

ME 1.1: At project inception, design an M&E plan that is specific to the green mortgage mechanism

ME 1.2: Document and disseminate experiences related to the launch of the green mortgage mechanism.

ME 1.3 Taking into consideration general RHP targets for this indicator, establish a target for green mortgage loans made to women and monitor progress relative to this target

For the design and supply chain activities under Component 2, the project will measure the number of EE and Low-Carbon houses that are constructed and the number of households (and number of women) that have access to EE and low-carbon technologies in the new rural houses. The project will also monitor certain aspects of the houses that are constructed, such as their energy performance. Finally, the project will monitor the outputs of the work related to technology promotion and assess sales of EE and renewable technologies and materials in Uzbekistan following project interventions.

ME 2.1: Monitor and audit actual, year-round energy performance, construction costs, and user energy costs (with an effort to cover two heating seasons by the end of the project for the first houses receiving green mortgages) in relation to a baseline RHP houses in similar conditions.

ME 2.2: Document design dissemination, piloting, and labelling on an on-going basis and prepare a lessons-learned report with recommendations on how to expand good design, financing, and labelling practices to a broader share of RHP-financed housing and to rural housing more generally.

ME 2.3 Develop and monitor targets related to market development and sales volume of EE and RE technologies and materials in the five pilot project regions (preliminary targets are provided in the Logical Framework in Section IV).

For the strengthened building codes and capacity strengthening for enforcement under Component 3, the project will monitor the status of the minimum energy performance standards and monitor the number of individuals trained (which includes monitoring the number of women receiving training and documenting the steps taken to encourage women's participation in training activities). In addition, the project will monitor and evaluate effects of the pilot-level rural settlement development plan that incorporates sustainable energy concerns.

ME 3.1: Measure changes in knowledge and institutional capacity following training and capacity strengthening for Gosarchitectstroy and monitor efforts to include women in training and capacity strengthening activities and gender-differentiated participation.

ME 3.2: Assess benefits due to changes in pilot territorial planning and institutional uptake of these activities; monitor efforts to include women in training and capacity strengthening activities related to sustainable territorial planning and gender-differentiated participation

For the outreach and awareness-raising activities under Component 4, the project will conduct surveys to measure changes in knowledge and awareness among training participants and in target communities more generally. Women's participation in training activities will be monitored, as will gender differences in the change in knowledge and awareness over time.

ME 4.1: Conduct gender-disaggregated survey to assess changes in knowledge and awareness raising among banks and government agencies.

ME 4.2: Document the training process and uptake of sustainable local development (SLD) and energy management concepts two months after training and two years *ex post* with attention to any gender differences in participation and awareness.

Finally, two independent project evaluations—a mid-term evaluation in late 2019 and a terminal evaluation in mid-2022—will evaluate project management and project progress towards outputs and outcomes.

ME 5.1 Commission and oversee an independent mid-term review and integrate findings into project management and activities.

ME 5.2 Commission and oversee an independent final review and disseminate lessons learned to all relevant stakeholders.

Project Benefits

Analysis of economic, social and environmental benefits of the project

National, Regional, and Local Benefits

The project will deliver substantial socio-economic benefits for the people of Uzbekistan, nearly half of whom reside in rural areas and are therefore particularly vulnerable to climate change. The project's launch scheme for green mortgages will directly benefit up to 1,588 rural households (nearly 7,940 people) by providing them with affordable financing for comfortable and energy efficient housing.

Another important economic co-benefit of the project will be the development of domestic production of EE building materials and subsequent opportunities for job creation and economic growth in rural areas, which will be spurred by the adoption of new building codes and higher energy performance requirements.

Other national and local benefits will also be substantial. They include the following:

- Strengthened local governance in such areas as land-use planning, building/construction permit issuance, and environmental monitoring and protection.
- Improved skills and job creation potential of rural residents on eco-building construction, installation and maintenance of modern technologies in buildings, production of eco-materials and products (9.3% of jobs in Uzbekistan are already in the construction sector).[71]
- Improved access to financing for rural residents.
- Better quality of life and access to essential services (housing, energy, water, sanitation) for rural population, resulting in decreased disparities and inequalities.
- Improved health through better outdoor and indoor air quality due to the reduced use of fossil fuels, charcoal, and wood-burning stoves (as compared to existing housing stock).

An analysis of linkages between project outputs and progress towards Sustainable Development Goals (SDGs) was conducted during the preparation of the project.[72] This analysis identified four areas with clear linkages to SDGs: benefits to people (SDGs 1, 2, and 7), prosperity (SDGs 8 and 10), the planet (SDG 13), and partnerships (SDG 17).

The project is explicitly designed to mainstream environmental sustainability by introducing more efficient and less resource-intensive housing throughout rural areas in Uzbekistan. Efficient homes will reduce the amount of non-renewable resources consumed in rural areas and – when minimum energy performance standards are introduced for residential buildings – in all new housing constructed in Uzbekistan.

Another significant benefit of the project will be a significant reduction in threats to energy security among rural families. Because buildings are responsible for over 50% of domestic energy use, the project will help improve energy security not only for this group, but also for the country in general. Benefits may also accrue to national energy providers in the form of lower costs for transmission and distribution and the possibility of deferring system upgrades or 'right-sizing' new generating capacity given that the same amount of energy will be able to service more consumers.[73]

In terms of gender impacts, a 2014 Country Gender Assessment for Uzbekistan found that "integration of gender issues remains limited in hard sectors such as infrastructure development, transport, and energy."[74] Studies have identified certain energy-related tasks, such as boiling water to kill bacteria, as tasks that are done primarily by women and which require a reliable energy supply.[75] There is also some evidence that

[71] State Committee on Statistics (2013).

[72] Center for Economic Research (2016).

[73] An IEA report identifies these benefits in addition to secondary benefits related to the affordability of energy services, which will become increasingly important as tariffs rise during the project implementation period. Source: IEA (2014): 22.

[74] ADB (2014): 7.

[75] Ibid: 41.

labour-saving devices for housework, which primarily benefit women due to the distribution of household duties, may not be purchased when power supply is unreliable.[76] In addition, women in rural areas can benefit from reliable and affordable energy supplies because they enable the establishment of home-based businesses, particularly in food preparation. Finally, adult women may spend more time in the home than adult men, and thus benefit more from improvements indoor air quality and climate. All of these findings indicate that sustainable energy in rural households may produce a variety of benefits that accrue to women. Additional information is provided in Annex 13.

Global Environmental Benefits

The project will also generate global environmental benefits in the form of reduced emissions of greenhouse gases. It will reduce energy consumption directly by 8,266,185 GJ and corresponding emissions by approximately 463,894 tCO_2e during a 20-year investment lifetime, and it will result in an estimated indirect reduction of GHG emissions of 891,925 tCO_2e - 4.7 million tCO_2e over a 20-year investment lifetime. Annex 11 of this document provides an overview of the calculations and assumptions that contributed to the quantitative estimate of GHG emission reductions from this project.

Cost-effectiveness

The project will leverage GHG emission reductions in a highly cost-effective manner. By covering only a portion of the relatively low additional cost of EE and Low-Carbon house construction (3-6%), it will reduce energy requirements and GHG emissions in a building by approximately 25%. Furthermore, the project will leverage more than USD 130,665,099 million in co-financing; i.e., a co-financing ratio of more than 20:1. The co-financing profile of the project is provided in Table 10.

Table 10: Overview of Project Co-Financing

Source	Type of Co-Financing	Purpose	Amount (USD)
GEF	Grant	Project activities with an incremental global benefit	6,000,000
UNDP	Grant	Support for project activities as specified	300,000
Government	Grants	Provision of infrastructure at pilot rural sites, including transportation and social infrastructure Design revision, site preparation, construction oversight	9,094,228 (Gosarchitectstroy) 23,181,366 (QQL)
Government	In-Kind	Office space and utilities, experts, supporting research, provision of laboratory equipment	550,000 (Gosarchitectstroy)
Other	In-Kind	Support for market development and	250,000

[76] ADB (2011) Uzbekenergo Advanced Electricity Metering Project, cited in ADB (2014): 48.

		training activities as specified in co-financing letters (see Annex 15)	(Association of Producers of Renewable Energy Technologies) 150,000 (Chamber of Commerce and Industry of Uzbekistan) 50,000 (Institute of Energy and Automation) 50,000 (Tashkent State Technical University)
Participating Banks[77]	Direct Investment	Mortgages to finance the 1,588 pilot EE and Low-Carbon houses	97,039,505 (at least two banks)
Homebuyer Equity	Direct Investment	Cash down payments to finance the 1,588 pilot EE and Low-Carbon houses	22,222,047 (homebuyers)
TOTAL			**136,665,099**

The table above provides a very conservative estimate of parallel financing for three reasons:

1. Total stated commitments of the participating banks, as the co-financing letters in Annex 15 indicate, are much larger than the direct investment indicated in Table 10, which reflects only the pilot houses rather than the projected total of 13,000 RHP houses that will be constructed during 2016. **Committed mortgage financing** for the RHP as a whole through 2016 is more than *USD 1.53 billion*.[78]

2. **Additional investment commitments** to the project have been provided by other government partners, such as *O'ZGASHKLITI,* a state design institute (USD 7,846,000), and *Qishloq Qurilish Invest (QQI***),** an investment company that provides tendering, contracting, and construction oversight for RHP houses (USD, 85,592,735).

3. **Additional parallel financing** will be provided in the form of mortgage credits for the RHP for 2017-2020 to cover planned construction, which is currently estimated at 66,000 housing starts for those years. These credits will be provided by current mortgage lenders and an additional three participating banks.

Up to 1,588 households and nearly 7,940 people in rural settlements will benefit directly from the green mortgage scheme. In addition, many additional houses will benefit indirectly from other project activities, such as the strengthened residential codes, during the project period. Families will continue to experience

[77] QQB and Ipoteka Bank have provided letters of co-financing (see Annex 15). The actual distribution of co-financing across these financial institutions will be determined in the course of project implementation.

[78] The total of USD 973,200,000 reflects the combined commitments of QQB (USD 877.3 mln) and Ipoteka Bank (USD 95,900,000) through 2016. These amounts are stated in the co-financing letter of QQB in Annex 15.

project benefits after the conclusion of the project, because efficient building performance will continue to bring improved comfort and reduced utility bills, even after the mortgages are repaid.

Other Considerations

Project consistency with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programmes of action, or other relevant instruments, where they exist: The project is highly consistent with national sustainable development strategies and national communications on climate change. The section of this document entitled "Policy and Regulatory Framework" contains a description of these strategies and their fit with project objectives and proposed outcomes. In addition, Annex 14 provides a description of the ways in which the project outputs and activities comply with the Presidential Resolution on Energy Efficiency.

Compliance of the project with relevant national technical standards: All construction work performed under the project will comply with relevant national technical standards for residential buildings and technical and performance specifications for construction materials; in fact, the project will directly support standards development in the form of building codes as a part of Component 2. Annex 12 of this document attests to the fact that this project does not require an Environmental Impact Assessment, and the environmental and social impact screening (Annex 13) did not identify any issues that would indicate any potential problems related to compliance.

Duplication of project/programme with other funding sources, if any: Following a thorough review of ongoing in-country activities in the sectors this project will address, no duplication with other funding sources has been identified. An overview of other initiatives is provided in Annex 3 of this document.

Learning and knowledge management component to capture and disseminate lessons learned: The project will apply three key methods to knowledge management: (i) a comprehensive inventory and synthesis of existing knowledge base, including the lessons that have emerged from related projects and programmes in Uzbekistan and elsewhere; (ii) dissemination of international good practice in household energy for rural areas; and (iii) systematic codification of emerging lessons and knowledge during the project implementation. Dissemination of good practice is reflected in project training and awareness-raising activities and indicators in each project component. Systematic codification of emerging lessons includes both specific knowledge products (ranging from the Rural Technology Needs Assessment to specific proposals and lessons learned reports). Gender is incorporated in all three methods, from the project gender analysis to training on gender issues at project inception to a codification of gender-disaggregated information in all project components.

This three-pronged approach to knowledge generation and dissemination will be reinforced through publications and targeted dissemination through the media and through meetings with authorities at all levels and with rural communities. In addition, project activities in each component will include training and capacity strengthening for targeted groups of stakeholders such as home buyers, commercial banks, government officials at the national, regional, and district level, and design institutes.

Knowledge products in the project will be produced by the project team and (for general media outreach) by public relations and communications professionals. Care will be taken to ensure that the products are available in the most accessible language for their target audience.[79] The project will also leverage existing channels of distribution (radio, regional television, exhibitions, civil society offices, and schools and

[79] The need for outreach materials in the Uzbek language was a lesson learned from the recent UNDP Low Emission Development strategy.

healthcare facilities) to reach this audience and will review the outreach strategy for each product to ensure that distribution is equally accessible to women and men. Table 11 provides an overview of some of the knowledge products that will be developed by the project.

Table 11: Sample Project Knowledge Products by Component

Component	Knowledge Products
1	Green mortgage operational manual for bankers Green mortgage handbook for policy-makers Green mortgage brochure for RHP mortgage applicants
2	Technical documentation for the EE and Low-Carbon Houses for design professionals Report on benefits following performance monitoring of the new houses Rural Technical Needs Assessment for policy-makers Market reports and supply chain analysis for private sector, policy-makers
3	Four new building codes (SNiPs) for submission to government Seven revised building codes for submission to government Reference manuals to accompany each of the new and revised codes Other technical documents related to energy efficiency and the use of RES Functional analysis and recommendations on code enforcement for Gosarchitectstroy Training manual (code compliance) for UMDPO personnel Training manual (design review) for UMDPO and other developers/architects Training manual on supporting design analysis software for UMDPO Summary of planning recommendations to the State Committee on Land Resources
4	Training module for communities (as a supplement the UNDP SLD Handbook) Targeted fact sheets for rural communities on EE/RE topics for resource center Replication strategy proposal for government policy-makers and other donors
5 (Project Mgmt.)	Summary of project achievements (report for policy-makers, UNDP) Presentations on project progress/achievements for the UNDP Community Summary of project benefits in the area of public utilities, including energy supply Summary of project achievements (brochure for broader, international audience) News articles on the project's work Brochures, radio spots, and television clips on the benefits of EE/RE home features

Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. These include the "Energy-Efficient Buildings in Central Asia and Armenia" website (www.beeca.net), which will support project networking with other countries in Central Asia and the Caucasus. In addition, there will be a two-way flow of information between the project and the UNDP-GEF global Framework Programme on Low Greenhouse Gas Emissions Buildings. Activities that will benefit the project and support effective project learning and knowledge sharing will include those carried out under two of the thematic approaches in the framework program: 1) Using rural homes and settlements as promoters of energy efficiency; and 2) Promoting and increasing the uptake of high-quality energy building regulations. The project results will be useful to the framework program in areas where it focuses on the leading role of the public sector, such as codes, metering, assessment and monitoring, and broad education programs. Data from the project will also enhance the state of knowledge of building performance in the broader region.

Consultative process, including the list of stakeholders consulted, undertaken during project preparation: The concept of a green mortgage for rural housing has been developed over several years of consultations with the key stakeholders. These stakeholders are described in Annex 4, while consultations are documented in Annex 5. Multiple targeted missions by UNDP regional and HQ staff have been undertaken in order to meet with government partners, international financial institutions, and other stakeholders in the private sector and civil society to determine their needs and concerns in the area of sustainable rural housing.

Justification for funding requested, focusing on the incremental cost of mitigation: The project presents an efficient way to reduce future GHG emissions in the buildings sector for several reasons:

- The sector has a high potential for cost-effective mitigation efforts.
- The sector offers entry points for renewable energy (such as solar) that are of interest to home-owners.
- Policy-related work, such as work to strengthen the energy performance requirements for residential buildings, will generate large and lasting effects on emissions by ensuring that *all* future buildings are more efficient.

Specific activities have been designed based on the most cost-effective selection of policy de-risking instruments, financial de-risking instruments and direct financial incentives to achieve scaled-up investment. The aim will be to ensure the maximum leverage of public funding for private sector investment.

Justification of sustainability of the project/programme outcomes taken into account when designing the project: Because the project will operate for six years, it is expected that several trends will be in effect that will support the sustainability of financing mechanisms for efficient housing. First, market development activities under the project are likely to reduce the cost of some building technologies and materials, which in turn will reduce the cost of the EE and Low-Carbon houses. Second, policy advocacy undertaken as a part of the project may result in the Government using green procurement regulations to mandate the construction of more efficient houses under the RHP, and the design and pilot construction activities may also eventually lead to the EE design becoming the government standard for its RHP houses. Finally, a funding proposal can be developed and submitted to the Green Climate Fund to scale up the financing mechanisms developed under the project.

More broadly, the building code revision supported by the project will compel *all* new rural houses, both RHP houses and houses constructed with other financing, to become significantly more efficient starting in 2019. Furthermore, the materials and practices used in the pilot houses such as siting/orientation, insulation and efficient windows, will ensure better energy performance throughout the lifetime of the building.

Innovativeness, sustainability and potential for scaling up:

The proposed project is highly innovative in that it will combine specific climate mitigation activities in the rural housing sector with sustainable low-carbon planning for rural communities. The project contributes to innovation in that it will demonstrate a variety of construction technologies (both construction and insulation materials, design innovations, and RES) in the Uzbek market that have not been adopted to date due to lack of knowledge and awareness. Most of these technologies are also relatively unknown in the housing market of other Central Asian countries. On a related note, the project will also create an enabling environment for greening the supply chain in the construction sector and will create "green" jobs for providers of construction materials, equipment, and appliances.

In addition, the project will develop two funding schemes that support low-carbon rural housing: 1) the green mortgage incentive; and 2) a mechanism to support the installation of solar PV units in rural houses. Both of these mechanisms will be completely new to the Central Asian housing market. The RHP mortgage

in itself is already highly innovative in that it offers a government-backed mortgage product, and the green mortgage mechanism will provide an additional feature: an incentive to invest in efficient and low-carbon rural housing.

Furthermore, the project will introduce innovative skills and knowledge under the component on rural territorial planning. The consideration of climate change mitigation and adaptation issues in town planning will be a first for the country and highly innovative for the region as well; when climate considerations have been integrated into local planning in the region, it has been at the annual planning stage rather than earlier in the process when spatial planning is taking place. The tools developed under this component will enable the Government to influence energy consumption in a way that has not been previously considered.

The key elements of the project which shall ensure the project's sustainability beyond international support are as follows: 1) the green mortgage scheme, which will provide a visible example to banks and the government of investment returns on energy efficiency and RES; 2) revised energy performance building codes and the capacity to ensure their rigorous application and enforcement, which will build in a lower emissions trajectory long after project closure; and 3) specific project activities focusing on the sustainability of the financial mechanism and increasing the savings generated by efficient houses by lowering the cost of designs and materials.

The potential to scale up the project is incorporated into the project design. Beyond the direct project replication measures, the potential is large--not just in Uzbekistan (e.g. using the green mortgage mechanism for the urban residential market or expanding financing for solar PV units to existing households), but also in the development of designs and best-practice financing mechanisms that could be used in neighboring countries.

Specifically, the development of the green mortgage mechanism in Component 1 will produce a 'market leading' effect. Energy consumption in future houses will decline as demand for houses with lower overall monthly expenses increases. There is also a large potential source of uptake for design and technological innovations emanating from the project in the RHP as a whole. In addition, the development of a financing mechanism for solar PV units will use the starting point of consumer demand for a secure supply of energy to interest consumers in investments that will reduce fossil fuel use and GHG emissions. The scale of these activities is potentially very large, as these systems are of interest to existing mortgage-holders and people who already own a home, rather than just new home-buyers.

Furthermore, as a result of activities on building codes under Component 2, *all* new residential buildings – not just rural homes participating in the project – will have to meet higher performance standards. As noted above, these standards will remain in effect after the project concludes, and there is already a schedule in place for revising and updating them on a periodic basis.

Under Component 3, the town planning activities represent another area with a large potential for scaling up, both inside the country and in neighboring countries. The need for planning tools that incorporate climate considerations will only increase in the region over time.

Finally, the project includes specific actions to support replication through the development of a Replication Strategy Proposal for government policy-makers and donors under Component 4 of the project. Throughout implementation, the project team will collaborate closely with GEF-funded activities that promote the development of a market for energy-efficient materials and EE/RE technologies and equipment.

III. PROJECT RESULTS FRAMEWORK:

Project Logical Framework (GEF)

This project will contribute to achieving the following UNDAF/Country Programme Outcome: By 2020, rural population benefit from sustainable management of natural resources and resilience to disasters and climate change **CPD Output:** Appropriate policy/regulations/financial products (green mortgage) are in place to enable scaling-up of construction of low-carbon housing/settlements						
Country Programme Outcome Indicators: Indicator 5.a Number of minimum-energy performance standards for rural housing adopted nationally. Indicator 5.b Percentage of rural homeowners that invest in houses featuring low-carbon technologies						
Primary applicable Key Environment and Sustainable Development Key Result Area: 1. Mainstreaming environment and energy						
Applicable Outputs from the UNDP 2014-2017 Strategic Plan: Output 1.5: Inclusive and sustainable solutions adopted to achieve increased energy efficiency and universal modern energy access (especially off-grid sources of renewable energy)						
Applicable Output Indicators from the UNDP Strategic Plan Integrated Results and Resources Framework: Output 1.5 Indicator 1.5.1: Number of new development partnerships with funding for improved energy efficiency and/or sustainable energy solutions targeting underserved communities/groups and women.						
Applicable GEF Focal Area Objective: CCM-2: Promote Market Transformation for Energy-Efficiency in Industry and the Building Sector						
	Indicator	**Baseline**	**Mid-Term Targets & Milestones**	**End of Project Targets & Milestones**	**Source of verification**	**Assumptions**
	Total Lifetime Direct and Indirect GHG	No significant GHG emissions avoided – current construction techniques and building codes will "lock in" a higher-than-necessary trajectory of emissions in the housing sector.	By the project mid-term, direct GHG emissions avoided will be at least 1,764 tCO_2eq reduced or avoided from the EE and RE measures implemented in the green mortgage houses and 58,750 tCO_2eq from the	Direct GHG emissions avoided:	Project's verified energy saving and GHG monitoring reports; sectoral and national data from Uzhydromet and the State Committee on Statistics	The necessary legal, regulatory, institutional and financial prerequisites to proceed with the planned investments and other EE (operational) improvements exist

GEF Project Objective[80]: To provide Uzbekistan's rural population with improved, affordable and environmentally-friendly living conditions	Emissions Avoided (tCO_2eq)* *		introduction of stricter building codes Total direct GHG emissions avoided: 35,291 tCO_2eq over an assumed technology and materials lifetime of 20 years	52,712 tCO_2eq[81] reduced or avoided calculated during the project lifetime from the EE and RE measures implemented and from strengthened building codes Total direct GHG emissions avoided: 463,894 tCO_2eq over an assumed technology and materials lifetime of 20 years Indirect GHG emissions avoided: 891,925 tCO_2e - 4.7 million tCO_2e over 20 years, representing bottom-up and top-down estimates, respectively		
	Lifetime energy saved (expressed in GJ)*	In the absence of the project, fossil fuel consumption will continue to grow in the rural housing sector	By the mid-term, the project achieves energy savings of at least 32,376 GJ from direct investement,	The project achieves energy savings of at least 939,250 GJ during the project lifetime, or 8,266,185 GJ	See above	See above

[80] *This GEF objective corresponds to the UNDPAtlas project output. It will be monitored quarterly in the ERBM and annually in the APR/PIR.*

* Indicates a GEF Climate Change Tracking Tool indicator.

[81] This estimate assumes that 1,588 houses are constructed (265 in Year 3 of the project, 525 in Year 4, and 798 in Year 5).

		due to increases in the size of the housing stock in spite of selected energy efficiency gains.[82]	code strengthening, and other measures.	over the of 20-year building lifetimes from direct investment, code strengthening and other measures facilitated by the project.		
	Volume of investment mobilized and leveraged by GEF for low GHG development (co-financing and additional financing)*	Investments in energy efficiency are not currently made in the rural housing sector	By the mid-term, investments of at least USD 19 million are leveraged (not including GEF financing)	By the end of the project, investments of at least USD 129 million are leveraged (not including GEF financing).	Final evaluation Government statistics on the Rural Housing Programme	Partners maintain their financial commitments, and increased awareness among homebuyers and financial institutions leads to an increase in investments in EE and LC rural houses.
	Number of users of low-GHG systems (number, of which female)*	Low-GHG systems are not currently used to any significant extent in rural areas of Uzbekistan	By the project mid-term, at least 750 households (appr. 3,750 people. of which appr. 1,875 are female) will use low-GHG systems in the form of solar PV units and/or efficient technologies	By the end of the project, at least 1,588 households (appr. 7,940 people, of which appr. 3,970 are female) will use low-GHG systems in the form of solar PV units and/or efficient technologies	RHP records, project documentation.	Lending institutions will continue to seek gender balance in loan applications and mortgages granted.
	Number of new development partnerships with funding for improved energy efficiency and/or sustainable energy solutions targeting underserved	The baseline for this indicator in the area of rural housing is zero.	By the mid-term, project activities will result in at least one new development partnership for improved EE and/or sustainable energy solutions targeting	Project activities will result in at least one new development partnership for improved EE and/or sustainable energy solutions targeting	Project documentation Reporting on co-financing	Rural housing will remain a priority for the government and for other development partners.

[82] CENEf (2014). Tashkent: UNDP: 13.

	communities/groups and women**		underserved communities/groups and women.	underserved communities/groups and women.		
	Local benefits: Satisfaction of beneficiaries and other local benefits generated	Satisfaction and benefits accruing to residents are not currently measured.	Satisfaction of EE and Low-Carbon house occupants with their housing and utility services will be at least as high as the satisfaction measured in a control group of occupants of standard RHP houses (as measured on a five-point scale). Indoor air temperature compliance with recommended norms will be at least comparable with houses in the selected control group.	Satisfaction of new and existing EE and Low-Carbon house occupants with their housing and utility services will be at least as high as the satisfaction measured in a control group of occupants of standard RHP houses (as measured on a five-point scale). Indoor air temperature compliance with recommended norms will be at least comparable with houses in the selected control group. Economic, social, health, and local environmental benefits of the EE and Low-Carbon houses will be assessed (using	Project monitoring surveys Data from independent MTE and TE	Suitable control groups will be identified for the project-based sample with similar energy provision profiles. Access will be provided to the intervention and control groups.

** UNDP CPAP Indicator

				gender-differentiated data).		
GEF Outcome 1[83]: Green mortgage market mechanism to scale-up demand for low-carbon housing	Status of non-grant mechanisms and/r incentives to invest in houses and other infrastructure featuring low-carbon design and/or technologies	There is currently no mechanism to leverage existing investments in rural housing to cover EE and RE technologies in rural houses	By the project mid-term, at least one mechanism to finance EE and RE technologies in rural houses will be operational in Uzbekistan.	At least one non-grant mechanism to encourage investment in energy efficiency and/or renewable energy is operational in Uzbekistan by the end of the project.	Bank records; RHP records; project surveys	
	Capacity of financial institutions to design and operate dedicated financial products that are accessible to both men and women for low-carbon housing is present	Banks in Uzbekistan do not have experience in designing and operating dedicated financial products for EE and RE equipment and materials	By the mid-term, financial products reach at least 750 households (3,750 people) [Mid-term target for green mortgage lending to women during the development of the mechanism]	Financial products reach at least 1,588 households (7,940 people) in rural areas by the end of the project [Final target for green mortgage lending to women TBD during the development of the mechanism]	Documentation of financing agreements ADB/RHP Documentation	The RHP will continue to maintain sex-disaggregated databases on mortgage applications and lending
GEF Outcome 2: Construction and domestic supply chain for low-carbon housing and settlements strengthened	Level of dissemination of prototype EE and low-carbon designs for rural houses and settlements; i.e., the number of rural households with	Standard homes with these designs are not currently available in Uzbekistan	By the project mid-term, at least 750 households (3,750 people) have access to new rural houses featuring advanced EE/RE technologies	By the end of the project, at least 1,588 households (7,940 people) have access to new rural houses featuring advanced EE/RE technologies	RHP and project documentation; loan agreements; construction documentation	Continuing political support at the central government level, allocations of adequate budget and/or other financial resources to support continuing operation

[83] *GEF outcomes are equivalent to UNDP Atlas activities. All outcomes will be monitored annually in the APR/PIR*

	access to houses with EE/RE technologies					
	Energy performance of the EE and low-carbon houses reflects significant improvements over standard RHP houses	EE and low-carbon houses are not currently available under the RHP program in Uzbekistan	By the project mid-term, at least 90 energy audits of rural houses constructed in 2018 conducted to demonstrate that the EE/LC houses complied with indoor climate regulations with lower energy expenditures compared to a control group of standard RHP houses	By the end of the project, at least **180** audits conducted for rural houses constructed in 2018-2019 to demonstrate that the EE/LC houses complied with indoor climate regulations with lower energy expenditures than in a control group of standard RHP house	Energy audit data for EE/LC houses and control houses under the RHP program	Rural Housing Programme management will allow access to energy data for monitoring purposes
	Rural technology needs assessment (TNA) reflects current needs of both men and women	A rural TNA has not previously been conducted	By the project mid-term, at least one focus group of women is convened during the rural TNA stakeholder consultations	At least one focus group of women is convened during the rural TNA stakeholder consultations	Project reporting, TNA documentation	Women will be willing to attend a focus group on rural technology needs.
	Volume of sales through supply chain for low-carbon rural housing	Companies offering EE materials/ technologies and RE technologies do not currently have a sales chain for rural single-family houses; they sell to public sector	At the mid-term, at least 1-2 companies in each of the five pilot areas in Uzbekistan will have multiple sales related to rural housing construction.	By the end of the project, at least one company in each of the 5 pilot areas of Uzbekistan will have multiple sales related to rural housing construction[84].	Database of EE and RE companies (previous UNDP project records)	Companies will be interested in expanding their sales to a new market segment

[84] The exact number will be determined during project inception.

		buildings, or, to a lesser extent, multi-family residential buildings in urban areas				
GEF Outcome 3: Policy and regulatory reform to enable the scale-up of low-carbon housing and settlements	At least 3 building codes for housing in Uzbekistan are introduced with requirements for energy performance that are at least 30% stricter than existing codes.	One standard has been adopted	By the project mid-term, at least three strengthened codes with stricter thermal performance requirements (by at least 30%) will be fully elaborated and submitted for approval by the Government	By 2020, at least three strengthened building codes with requirements for energy performance that are at least 30% stricter than existing codes will be in place.	Project monitoring and evaluation reports; regulations published by Gosarchitectstroy	Continuing political support to the suggested legal and regulatory changes
	Rates of compliance with applicable energy performance standards in residential building codes	Baseline compliance has not been formally documented for the residential sector as a whole.	By the project mid-term, all new houses constructed under the RHP will conform to applicable energy standards in building codes	By the end of the project, there will be near-universal compliance for new residential buildings constructed in Uzbekistan.	Audits on RHP houses conducted by the project team. Enforcement documentation from Gosarchitectstroy	Increased enforcement and training will lead to improved compliance.
	Number of specialists (architects, builders, designers, etc.) certified/successfully completing training in the new codes, design review, certification, and compliance issues and techniques	Gosarchitectstroy does not currently appraise rural housing designs with a view to a "low-carbon" designation or other performance standards	500 specialists (architects, builders, designers, etc.) certified/successfully completing training by Year 3 of the project in the new codes, design review, certification, and compliance issues and techniques [precise number and	1,500 specialists certified/successfully completing training by the final quarter of the project [precise number TBD at project inception]	Annual training reports by project staff; independent mid-term evaluation and final evaluation	Training needs for the rural housing sector will be analogous to those in the public building sector in terms of curriculum design and approach

			target for women's participation TBD at project inception]			
	Number of land-use plans and/or zoning regulations improved to maximize efficient resource use and incorporate climate considerations.	Currently, land-use plans and regulations do not take climate considerations or energy-savings into account	By the project mid-term, at least one siting regulation and one village-level land use plan will be **developed** that promote energy savings and/or climate considerations	By the end of the project, at least one siting regulation and one village-level land use plan will be **adopted** that promote energy savings and/or climate considerations.	State Committee on Geodesy… official records; project reports on Component 3	There will be interest in maximizing resource use efficiency at the local level in participating villages.
GEF Outcome 4: Marketing and Promotion of Low-Carbon Houses and Settlements	Number of communities [or districts] that support incorporating climate change considerations into decision-making	Currently, standard practice does not involve mainstreaming climate or energy management considerations into local decision-making	By the mid-term of the project, at least 5 communities in project pilot areas have tested a community-based mechanism of decision making to incorporate climate change considerations into decision-making [target for women's participation TBD at project inception].	By the end of the project, at least 15 communities take steps to incorporate climate change considerations into decision-making [target for women's participation TBD at project inception].	Project monitoring and evaluation reports	Energy management at the sub-national level will remain a policy priority for the government.
	Percentage of project stakeholders aware of EE and low-carbon housing and infrastructure Percentage of rural homeowners aware of EE and low-carbon housing and infrastructure	Awareness of the benefits of low-carbon housing and infrastructure is very low; the baseline will be determined at project inception.		By the end of the project, at least 90% of project participants (defined as participating households, participating banks, and relevant government agencies involved in project implementation) are aware of the	Project monitoring and evaluation reports Project monitoring survey; other RHP and ADB data as available	Rural residents will be interested in saving money when the relationship between energy savings and household expenses is presented in a clear way.

				benefits of EE and low-carbon houses.[85] By the end of the project, at least 10% of all rural homeowners (including owners of new RHP houses, existing RHP houses, and other privately-owned single-family houses) in pilot areas are aware of the benefits of EE and low-carbon houses. Awareness among project beneficiaries does not differ significantly between women and men in target groups surveyed.		
	Activities under the project communication strategy that explicitly consider gender		Communication strategies will reflect women's and men's communication channels in rural areas on an ongoing basis.	Communication strategies will reflect women's and men's communication channels in rural areas on an ongoing basis.	Project communication strategy; documentation of project outreach activities	Preferred communication channels for women and men can be identified.

[85] For all three indicators, awareness is measured as name recognition of the green mortgage program, a basic understanding of how to save energy in housing, and a basic understanding of the linkages between energy savings, financial savings, and other benefits.

Monitoring and Evaluation			At the project mid-term, a mid-term evaluation (TE) has been conducted and its findings extracted	By the end of the project, a terminal evaluation (TE) has been conducted, and its results and lessons learned have been made available to all relevant parties.	APR/PIR combined reports MTE and UNDP response to MTE findings TE and UNDP response to findings	
	Project staff and stakeholders are aware of gender issues in project monitoring and evaluation		A training block on gender mainstreaming will be included in the project inception workshop.		Project inception report	Training will provide project staff and stakeholders to monitor gender issues effectively.

TOTAL BUDGET AND WORK PLAN

Atlas Proposal (Award) ID:	00080813	**Atlas (Output) Project ID:**	00090382
Atlas Proposal (Award) Title:	Market Transformation for Sustainable Rural Housing in Uzbekistan		
Atlas Business Unit	UZB10		
Atlas (Primary Output) Project Title	Market Transformation for Sustainable Rural Housing in Uzbekistan		
UNDP-GEF PIMS No.	5392		
Implementing Partner	State Committee for Architecture and Construction (Gosarchitectstroy) of the Republic of Uzbekistan		

GEF Outcome/ Atlas Activity	Resp. Party/ Impl. Agent	Fund ID	Donor Name	ATLAS Budget Code	ATLAS Budget Description	Amount YEAR 1 (USD)	Amount YEAR 2 (USD)	Amount YEAR 3 (USD)	Amount YEAR 4 (USD)	Amount YEAR 5 (USD)	Amount YEAR 6 (USD)	TOTAL	Budget Notes
Component 1 Green mortgage market mechanism developed and operationalized	Gosarchitectstroy (000641)	62000	GEF-10003	72600	Grants	-	-	472,500	945,000	1,582,500	-	*3,000,000*	1
				71200	International Consult.	4,000	16,000	-	-	-	-	*20,000*	2
				71400	Contr. Service – Individ.	11,000	44,500	44,500	44,500	44,500	44,500	*233,500*	3
				72100	Contr. Service – Comp.	8,000	50,000	7,000	7,000	7,000	5,000	*84,000*	4
				71600	Travel	-	15,000	8,000	8,000	8,000	-	*39,000*	5
				74200	Audio Visual & Print Prod Costs	-	12,000	12,000	12,000	12,000	10,000	*58,000*	6
				75700	Training, Workshops and Conferences	4,000	7,500	9,000	9,000	9,000	4,500	*43,000*	7
				72500	Office Supplies	1,500	3,000	3,000	3,000	3,000	3,000	*16,500*	8
				74500	Miscellaneous	1,000	1,000	1,000	1,000	1,000	1,000	*6,000*	9
					TOTAL COMPONENT 1	**29,500**	**149,000**	**557,000**	**1,029,500**	**1,667,000**	**68,000**	**3,500,000**	
Component 2 Construction and domestic supply chain for low-carbon housing and settlements strengthened	Gosarchitectstroy (000641)	62000	GEF-10003	71200	International Consult.	-	35,000	45,000	-	-	-	*80,000*	10
				71300	Local Consultants	-	15,000	63,000	63,000	51,500	15,000	*207,500*	11
				71400	Contr. Service – Individ.	8,000	26,500	26,500	26,500	26,500	26,500	*140,500*	12
				71600	Travel	12,000	45,000	40,000	40,000	40,000	30,000	*207,000*	13
				72100	Contr. Service – Comp.	-	170,000	85,000	62,500	37,000	35,000	*389,500*	14
				74200	Audio Visual & Print Prod Costs	-	20,000	15,000	20,000	20,000	25,000	*100,000*	15
				74500	Miscellaneous	500	2,500	2,000	2,500	2,500	2,500	*12,500*	16
				75700	Training, Workshops and Conferences	-	13,000	10,000	10,000	15,000	15,000	*63,000*	17
					TOTAL COMPONENT 2	**20,500**	**327,000**	**286,500**	**224,500**	**192,500**	**149,000**	**1,200,000**	
Component 3 Policy and regulatory framework	Gosarchitectstroy (000641)	62000	GEF-10003	71200	International Consult.	-	20,000	-	-	-	-	*20,000*	18
				71400	Contr. Service – Individ.	1,500	22,500	22,500	22,500	22,500	22,500	*114,000*	19
				72100	Contr. Service – Comp.	-	19,000	25,000	9,000	14,000	10,000	*77,000*	20
				74200	Audio Visual & Print Prod Costs	-	6,000	6,500	6,000	6,000	5,000	*29,500*	21

reformed to enable scale-up of low-carbon housing and settlements				71300	Local Consultants	-	15,000	12,500	12,500	6,500	-	*46,500*	22
				71600	Travel	-	18,000	18,000	18,000	18,000	15,500	*87,500*	23
				72800	IT - software	-	14,500	-	-	-	-	*14,500*	24
				75700	Training, Workshops and Conferences	-	17,000	19,000	21,000	21,000	20,000	*98,000*	25
				72500	Office Supplies	-	1,000	1,000	1,000	1,000	1,000	*5,000*	26
				74500	Miscellaneous	-	2,000	1,500	1,500	1,500	1,500	*8,000*	27
	TOTAL COMPONENT 3					**1,500**	**135,000**	**106,000**	**91,500**	**90,500**	**75,500**	**500,000**	
Component 4 Low-Carbon Houses and Settlements marketed and promoted	Gosarchitectstroy (000641)	62000	GEF-10003	71300	Local Consultants	-	6,000	2,000	2,000	2,000	2,000	*14,000*	28
				72100	Contr. Service – Comp.	-	49,500	49,500	49,500	49,500	49,500	*247,500*	29
				71400	Contr. Service – Individ.	1,500	22,500	22,500	22,500	22,500	22,500	*114,000*	30
				71600	Travel	-	3,000	4,000	5,000	6,000	7,000	*25,000*	31
				72500	Office Supplies	-	-	1,000	1,000	1,000	1,000	*4,000*	32
				72800	IT - software	-	-	20,000	33,500	-	-	*53,500*	33
				74200	Audio Visual & Print Prod Costs	-	1,000	2,000	2,000	2,000	2,000	*9,000*	34
				75700	Training, Workshops and Conferences	-	-	12,000	12,000	12,000	12,000	*48,000*	35
				74500	Miscellaneous	-	1,000	1,000	1,000	1,000	1,000	*5,000*	36
	TOTAL COMPONENT 4					**1,500**	**83,000**	**114,000**	**128,500**	**96,000**	**97,000**	**520,000**	
Project Management	Gosarchitectstroy (000641)	62000	GEF-10003	71200	International Consult.	30,000	0	0	37,000	0	40,000	*107,000*	37
				71300	Local Consultants	17,000	0	0	10,000	0	10,400	*37,400*	38
				71600	Travel	5,000	5,500	5,500	6,000	6,000	5,500	*33,500*	39
				72100	Contr. Service – Comp.	7,000	700	700	800	800	1,300	*11,300*	40
				74100	Audit	5,000	5,000	5,000	5,000	5,000	5,000	*30,000*	41
				74200	Audio Visual & Print Prod Costs	2,500	4,500	4,500	4,400	4,200	4,500	*24,600*	42
				74500	Miscellaneous	500	500	800	800	800	800	*4,200*	43
				71400	Contr. Service – Individ.	2,000	5,000	5,000	5,000	5,000	5,000	*27,000*	44
				73400	Rental & Maint. of Other Equip.	500	1,000	1,000	1,000	1,000	500	*5,000*	45
	SUB-TOTAL PROJECT MANAGEMENT (GEF)					**69,500**	**22,200**	**22,500**	**70,000**	**22,800**	**73,000**	**280,000**	
	Gosarchitectstroy (000641)	04000	UNDP-TRAC	71400	Contr. Service – Individ.	7,000	12,500	12,500	12,500	12,500	12,500	*69,500*	46
				72200	Furniture	6,000	-	-	-	-	-	*6,000*	47
				72300	Vehicle cost	2,500	2,500	2,500	2,500	2,500	2,500	*15,000*	48
				72400	Communication	2,000	5,000	5,000	5,000	5,000	5,000	*27,000*	49
				74598	Direct Project Costs	2,500	35,400	35,400	35,400	35,400	35,400	*179,500*	50
				74500	Miscellaneous	500	500	500	500	500	500	*3,000*	51
	SUB-TOTAL PROJECT MANAGEMENT (UNDP)					**20,500**	**55,900**	**55,900**	**55,900**	**55,900**	**55,900**	**300,000**	
	TOTAL PROJECT MANAGEMENT					**90,000**	**77,900**	**78,400**	**125,900**	**78,700**	**128,900**	**580,000**	

TOTAL PROJECT (GEF)	122,500	716,200	1,086,000	1,544,000	2,068,800	462,500	6,000,000	
PROJECT TOTAL	143,000	772,100	1,141,900	1,599,900	2,124,700	518,400	6,300,000	

Budget Notes:

1. Output 1.1: Green mortgage amount to be transferred to national banks

2. Output 1.1: Hiring an international expert to provide expertise and technical assistance in green mortgage development (15,000 US$) / Output 1.2: Hiring an international expert to provide expertise and technical assistance in training curriculum development (5,000 US$)

3. Cost related to salaries of Task Manager, National Technical Advisor (25% of total salary) and Project Manager (95% of total salary)

4 Output 1.2: Costs of services provided by companies for organization of series of green mortgage trainings and development of training curriculum

5. Output 1.2: Travel associated with (a) trainings in pilot areas

6. Output 1.2: Costs of development and procurement of audio/video and printing materials for conducting trainings

7. Output 1.2: Costs associated with undertaking training, workshops, etc. in 5 pilot areas

8. Output 1.2: Procurement of stationery and other supplies for provision of trainings

9. Miscellaneous related to awareness raising and coordination activities

10. Ouptput 2.1. Hiring an international expert to provide expertise and technical assistance for development of EE and low-carbon prototype (20,000 US$)/ Output 2.2. Hiring international consultant to provide expertise and technical assistance in EE and RE technologies (60,000 US$)

11. Output 2.1. Hiring national consultants for monitoring construction works in pilot areas; and conducting benefits assessment (137,500 US$)/ Output 2.2. Hiring national experts to collect data, provide expertise and technical assistance in EE and RE technologies (70,000 US$)

12. Cost related to salaries of Task Manager, National Technical Advisor (25% of total salary)

13. Travel associated with monitoring activities and deployment of EE and RE technologies

14. Output 2.1: Costs associated with development of new design of EE and low-carbon prototype rural house / Output 2.2: Costs of contracting companies for conducting needs assessment and market research/study

15. Outputs 2.1 and 2.2: Costs of printing of analytical reports (50,000 US$)/ Output 2.2: Costs of printing and publications on market study findings (50,000 US$)

16. Miscellaneous related to implementation of the activities: bank charges, etc.

17. Output 2.2: Costs associated with conducting training, workshops, etc. in 5 pilot areas

18. Output 3.1: Hiring international experts to share best practices and provide technical assistance for development of MEPS

19. Costs related to salary of Task Manager and National Technical Advisor (25% of total salary)

20. Output 3.1: Cost of contracting companies/institutions for development of MEPS by relevant institutions / Output 3: Costs of contracting companies/institutions specialized in land-use plans and zoning regulations

21. Output 3.2: Costs associated with printing of MEPS related publications and costs of audio/video and printing materials for provision of trainings

22. Output 3.1: Hiring national experts for providing expertise and technical assistance in needs assessment / Output 3: Hiring national experts on Land-use plans and zoning regulations

23. Output 3.2: Travel associated with conducting seminars/ToT in 5 pilot areas and capacity building trainings

24. Output 3.2: Procurement of software for the calculation of technical parameters of EE buildings

25. Output 3.2: Costs associated with conducting seminars/ToT in 5 pilot areas and conducting trainings

26. Output 3.2: Costs of procurement of stationery and other supplies for provision of trainings
27. Miscellaneous related to implementation of activities including bank charges, etc.
28. Output 4.2: Hiring national experts on energy management
29. Output 4.1: Cost of contracting marketing and promotional company
30. Cost related to salary of Task Manager and National Technical Advisor (25% of total salary)
31. Output 4.2: Travel associated with conducting trainings
32. Output 4.2: Costs of procurement of stationery and other supplies for provision trainings
33. Output 4.2: Cost of procurement of energy management software
34. Output 4.2: Costs of audio/video and printing materials for trainings
35. Output 4.2: Costs associated with conducting trainings
36. Miscellaneous related to implementation of activities including bank charges, etc.
37. Output 5.1: Hiring national expert to conduct situation analysis update to contribute to development of Inception Report (30,000 US$)/ Output 5.5: Hiring an international expert for conducting mid-term evaluation (37,000 US$) / Output 5.5: Hiring international expert for conducting terminal evaluation (40,000 US$)
38. Output 5.1: Hiring national expert for contribution to development of Inception report (17,000 US$) / Output 5.5: Hiring national expert to support mid-term evaluation (10,000 US$) /Output 5.5: Hiring national expert for supporting terminal evaluation (10,400 US$)
39. Output 5.1 and 5.2: Travel associated with selection of pilot areas/sites, monitoring of pilot projects / Output 5.5: Travel associated with conduction of mid-term evaluation / Output 5.5: Travel associated with conducting terminal evaluation /Output 5.5: Costs of contracting service companies for organization of meetings to be held within terminal evaluation
40. Costs of contracting service companies for conducting Inception Workshop and annual meetings
41. Costs of yearly audits as per the corresponding UNDP rules and regulations
42. Output 5.1, 5.2, 5.3, 5.4: Costs of printing materials for inception workshop, report and related outreach materials (16,100 US$) / Output 5.5: Costs of printing related to mid-term evaluation report (4,000 US$) / Output 5.5: Costs of printing related to terminal evaluation report (4,500 US$)
43. Miscellaneous related to activities under this component
44. Costs related to project driver salary (50% of total salary)
45. Cost related to maintenance of IT equipment (50%) and project car (50%)
46. Costs related to salaries of Admin-Finance Assistant, Project Manager (5% of total salary) and driver (50% of total salary)
47. Cost related to procurement of office furniture
48. Cost related to project vehicle cost: fuel, oil, etc.
49. Costs associated with communication charges: internet, landline, etc.
50. Costs of providing direct project services
51. Miscellaneous related to management costs

Summary of Funds

Source of Funding	Amount 2016	Amount 2017	Amount 2018	Amount 2019	Amount 2020	Amount 2021	Total
GEF	122,500	716,200	1,086,000	1,544,000	2,068,800	462,500	**6,000,000**
UNDP	20,500	55,900	55,900	55,900	55,900	55,900	**300,000**
Other co-financing cash	0	0	19,397,265	38,794,530	71,123,304	0	**129,315,099**
Other co-financing in-kind	105,000	210,000	210,000	210,000	210,000	105,000	**1,050,000**
TOTAL	**251,000**	**982,000**	**20,748,965**	**40,603,630**	**73,457,404**	**622,100**	**136,665,099**

Timetable for Project Implementation

TASK	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5				YEAR 6			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24
COMPONENT 1																								
Activity 1.1.1																								
Activity 1.1.2																								
Activity 1.1.3																								
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COMPONENT 2																								
Activity 2.1.1																								
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TASK	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5				YEAR 6			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24
Activity 2.2.2																								
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TASK	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5				YEAR 6			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24
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TASK	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5				YEAR 6			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24
Activity 4.2.4																								
Activity 4.2.5																								
Activity 4.2.6																								
M&E																								
Project Management																								

MILESTONES	EXPECTED DATES
Start of Project/Programme Implementation	December 2016
Mid-term Review	November 2019
Project/Programme Closing	November 2022
Terminal Evaluation	September 2022

PROJECT TIMELINE FOR HOUSING DESIGN, APPROVAL/FINANCING, AND CONSTRUCTION[86]

Year	2016	2017	2018	2019	2020	2021
Milestone	Year-Round: Preliminary work: Pilot Designs Developed, Green Mortgage terms finalized	*September*: Applications for housing permits and mortgage financing submitted for Year 1	*March*: Construction starts on Year 1 houses *September:* Year 2 Green Mortgages issued *November*: Construction finishes; owners take possession; performance monitoring starts	*March*: Construction starts on Year 2 houses *April:* Data analysed for energy and cost performance *November*: Year 2 construction finishes; owners take possession; performance monitoring starts	*March:* Construction starts on Year 3 houses *April:* Data analysed for energy and cost performance *November*: Year 3 construction finishes; owners take possession; performance monitoring starts	*April:* Data analysed for energy and cost performance *April:* Data analysed for energy and cost performance

[86] It should be noted that this table is only indicative; the specific timing and number of years over which the pilot houses are constructed will be dependent on official decisions in the form of government resolutions.

IV. MANAGEMENT ARRANGEMENTS

Arrangements for project/programme implementation

The project will be implemented following UNDP's National Implementation Modality (NIM)[87], according to the Standard Basic Assistance Agreement (SBAA) between UNDP and the Government of Uzbekistan, the UNDP Country Programme Document for 2016-2020 and the Uzbekistan – United Nations Development Assistance Framework for 2016-2020, and as per policies and procedures outlined in the UNDP Programme and Operations Policies and Procedures (POPP)[88].

The national executing entity - also referred to as the national "***Implementing Partner***" in UNDP terminology - is required to implement the project in compliance with UNDP rules and regulations, policies and procedures (including the NIM Guidelines). According to the UNDP POPP, an Implementing Partner is "the entity to which the Administrator has entrusted the implementation of UNDP assistance specified in a signed document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in such document." By signing a project document, an implementing partner enters into an agreement with UNDP to manage the project and achieve the results defined in the relevant documents. In addition, an implementing partner may enter into agreements with other organizations or entities, known as **"*Responsible Parties*"**, which may carry out project activities and produce project outputs on behalf of the Implementing Partner. Responsible Parties are accountable directly to the Implementing Partner.

At the national level, the project will be executed by the State Committee for Architecture and Construction of the Republic of Uzbekistan (Gosarchitectstroy) as the National Implementing Partner. Gosarchitectstroy will retain overall responsibility for applying GEF and other inputs in order to reach the expected Outcomes/Outputs as defined in this project document. It will be responsible for the timely delivery of project inputs and outputs, and in this context, for the coordination of all other responsible parties, including other government agencies, regional and local government authorities.

Upon the request of the Government of Uzbekistan, UNDP will serve as the Implementing Entity (IE) for this project. Services that UNDP will provide to the Implementing Partner in support of achieving project Outcomes/Outputs are outlined below. UNDP's services will be provided by staff in the UNDP Country Office (Tashkent), UNDP Regional Centre for Europe and CIS (Istanbul, Turkey), and UNDP Headquarters (New York).

UNDP will be responsible for administering resources in accordance with the specific objectives defined in the Project Document, and in keeping with its key principles of transparency, competitiveness, efficiency, and economy. The financial management and accountability for the resources allocated, as well as other activities related to the execution of project activities, will be undertaken under the supervision of the UNDP Country Office (UNDP CO) with the UNDP's Regional Technical Advisor in Istanbul. UNDP will provide support to the Project Manager in order to maximize its reach and impact as well as for the delivery of quality products. UNDP will undertake the internal monitoring of the project and of evaluation activities, taking into account from the outset local capacities for administering the project, capacity limitations and requirements, as well as the effectiveness and efficiency of communications between all institutions that are relevant to the project.

UNDP will be fully accountable for the effective implementation of this project. As the Implementing Entity, UNDP is responsible for providing a number of key general management and specialized technical support services. These services are provided through UNDP's global network of country, regional, and

[87] NIM fully complies with the financial management and procurement guidelines of UNDP.

[88] https://info.undp.org/global/popp/ppm/Pages/Defining-a-Project.aspx

headquarters offices and units and include assistance in project formulation and appraisal; determination of execution modality and local capacity assessment; briefing and de-briefing of project staff and consultants; general oversight and monitoring, including participation in project reviews; receipt, allocation, and reporting to the donor of financial resources; thematic and technical backstopping; provision of systems, IT infrastructure, branding, and knowledge transfer; research and development; participation in policy negotiations; policy advisory services; programme identification and development; identifying, accessing, combining and sequencing financing; troubleshooting; identification and consolidation of learning; and training and capacity building.

The financial management and procurement of this project will be guided by UNDP financial rules and regulations[89] and the NIM Guidelines[90], which identifies four modalities for cash transfer to manage project finances. All four modalities can be used in the same project, for different activities and/or inputs:

- Direct cash transfer – UNDP advances cash funds on a quarterly basis to the implementing partner, who in turn reports back expenditure;
- Direct payment – the implementing partner carries out the procurement but requests UNDP to make the disbursement;
- Reimbursement – as for direct cash transfer, except that UNDP pays the implementing partner after the implementing partner has itself made the disbursement;
- Direct Agency Implementation – UNDP conducts expenditure from requisition through to disbursement with no cash being transferred to the implementing partner. However, the implementing partner has full programmatic control and so full control over expenditures.

For UNDP to ensure that cash transfers are properly managed, it will undertake due diligence and risk assessment activities, including the development of an agency assurance plan, regarding the following relevant institutions: the PIU of the Green Mortgage mechanism (once established and operational) and the overall PIU at Gosarchitectstroy. The PIU of the Green Mortgage Mechanism is to be located within the agency that will oversee the mechanism. As such, its establishment will also involve the organization that is selected for this work. All due diligence and risk assessment activities and any resulting capacity strengthening measures shall be mutually agreed upon between UNDP and the Government during the first year of project implementation.

In line with NIM Guidelines and cash transfer modalities, procurement under the project will be undertaken by either Responsible Party (overall PIU at Gosarchitectstroy or the Green Mortgage PIU) or by UNDP under the 'Direct Agency Implementation' modality. Wherever procurement is carried out by the Responsible Parties, it will be fully aligned with Government regulations and procedures, and will also be compatible with UNDP's financial and procurement standards. Specifically, according to UNDP Policies and Procedures, "UNDP has a responsibility to accept appropriate cash advance requests, reported expenses or direct payments that are consistent with the Annual Work Plan and UNDP's Financial Rules and Regulations (FRRs) and – therefore – to reject improper advance requests, expenses, or requests for direct payments. If subsequent information becomes available that questions the appropriateness of expenses

[89] https://info.undp.org/global/documents/frm/Financial-Rules-and-Regulations_E.pdf

[90] https://info.undp.org/global/documents/_layouts/WopiFrame.aspx?sourcedoc=/global/documents/frm/National%20Implementation%20by%20the%20Government%20of%20UNDP%20Projects.docx&action=default&DefaultItemOpen=1

recorded or direct payments already made, these should be rejected at any point up to the issuance and signature of the Combined Delivery Report."

Direct UNDP Country Office Support Services to the Programme Implementation

In accordance with the provisions of the letter of agreement signed on March 28, 2016,[91] and the approved Country Programme Document for 2016-2020,[92] UNDP and Gosarchitectstroy have agreed that the UNDP Country Office will provide the following support services for the project activities at the request of Gosarchitectstroy for the whole duration of the project cycle:

1. Identification and/or recruitment and solution of administrative issues related to the project personnel;
2. Procurement of commodities, labor and services;
3. Identification and facilitation of training activities, seminars and workshops;
4. Processing of direct payments;

The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of Gosarchitectstroy is strengthened to enable it to carry out such activities directly.

When providing the above support services, the UNDP Country Office will recover the costs for providing Implementation Support Services on the basis of actual costs and transaction fee based on the latest and actual version of the Universal Price List as provided at the end of this section. To cover these additional costs associated with supporting the implementing partner in project implementation; UNDP has secured additional resources from its core budget in order to fully recover the costs of direct project services that it will provide during the entire project duration.

The procurement of goods and services and the recruitment of project personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. If the requirements for support services by the country office change during the life of a project, the list UNDP country office support services is revised with the mutual agreement of the UNDP resident representative and Gosarchitectstroy.

The relevant provisions of the Standard Basic Assistance Agreement (SBAA) between the Government of Uzbekistan and the UNDP, signed by Parties on June 10, 1993, including the provisions on liability and privileges and immunities, shall apply to the provision of such support services.

Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this document shall be handled pursuant to the relevant provisions of the SBAA.

The main office of the project will be based in Tashkent to enable all relevant procedures of UNDP. UNDP in partnership with the National Partner Implementing Agency (Gosarchitectstroy) will be responsible for the competitive recruitment of national experts in accordance with the UNDP's Programme and Operations Policies and Procedures (POPP). Gosarchitectstroy will be fully and equally engaged in all relevant stages such as the development and approval of terms of reference (ToRs) and recruiting, consideration of gender mainstreaming issues, monitoring project progress, and assessment of the deliverables produced.

[91] A copy of this letter is provided at the end of this section.

[92] http://www.uz.undp.org/content/uzbekistan/en/home/operations/legal_framework/

LETTER OF AGREEMENT ON DIRECT PROJECT SERVICES

1. Reference is made to consultations between officials of the Government of *Uzbekistan* (hereinafter referred to as "the Government") and officials of UNDP with respect to the provision of support services by the UNDP country office for nationally managed programmes and projects. UNDP and the Government hereby agree that the UNDP country office may provide such support services at the request of the Government through its institution designated in the relevant project document of the joint project of the United Nations Development Programme (UNDP) and the Government of Uzbekistan (State Committee for Architecture and Construction) "Market Transformation for Sustainable Rural Housing in Uzbekistan", as described below.

2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of the Government-designated institution is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the project.

3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the programme/project:

(a) Identification and/or recruitment and solution of administrative issues related to the project personnel;

(b) Procurement of commodities, labour and services;

(c) Identification and facilitation of training activities, seminars and workshops;

(d) Processing of direct payments.

4. The procurement of goods and services and the recruitment of project and programme personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of a programme or project, the annex to the project document is revised with the mutual agreement of the UNDP resident representative and the designated institution.

5. The relevant provisions of the Standard Basic Assistance Agreement (SBAA) between the Government of Uzbekistan and the UNDP, signed by Parties on 10th June 1993, including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The Government shall retain overall responsibility for the nationally managed project through its designated institution. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the project document.

6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the SBAA.

7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above shall be specified in the annex to the project document.

8. The UNDP country office shall submit progress reports on the support services provided and shall report on the costs reimbursed in providing such services, as may be required.

9. Any modification of the present arrangements shall be effected by mutual written agreement of the parties hereto.

10. Upon the signature, this letter shall constitute an agreement between the Government of Uzbekistan and UNDP on the terms and conditions for the provision of support services by the UNDP country office for nationally managed joint project of the United Nations Development Programme (UNDP) and Government of Uzbekistan (State Committee for Architecture and Construction) "Market Transformation for Sustainable Rural Housing in Uzbekistan".

For the Government of Uzbekistan:

Azamat Tokhtaev
First Deputy Chairman
State Committee for Architecture and Construction
of the Republic of Uzbekistan

Date: 28 марта 2016

On behalf of UNDP:

Farid Garakhanov
Resident Representative a.i.
UNDP Uzbekistan

Date: 24 March, 2016

DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

1. Reference is made to consultations between the State Committee for Architecture and Construction of the Republic of Uzbekistan, the institution designated by the Government of Uzbekistan and officials of UNDP with respect to the provision of support services by the UNDP country office for the nationally executed project joint project of the United Nations Development Programme (UNDP) and Government of Uzbekistan (State Committee for Architecture and Construction) "Market Transformation for Sustainable Rural Housing in Uzbekistan", Project ID 00080813.

2. In accordance with the provisions of the letter of agreement signed and the project document, the UNDP country office shall provide support services for the Project as described below.

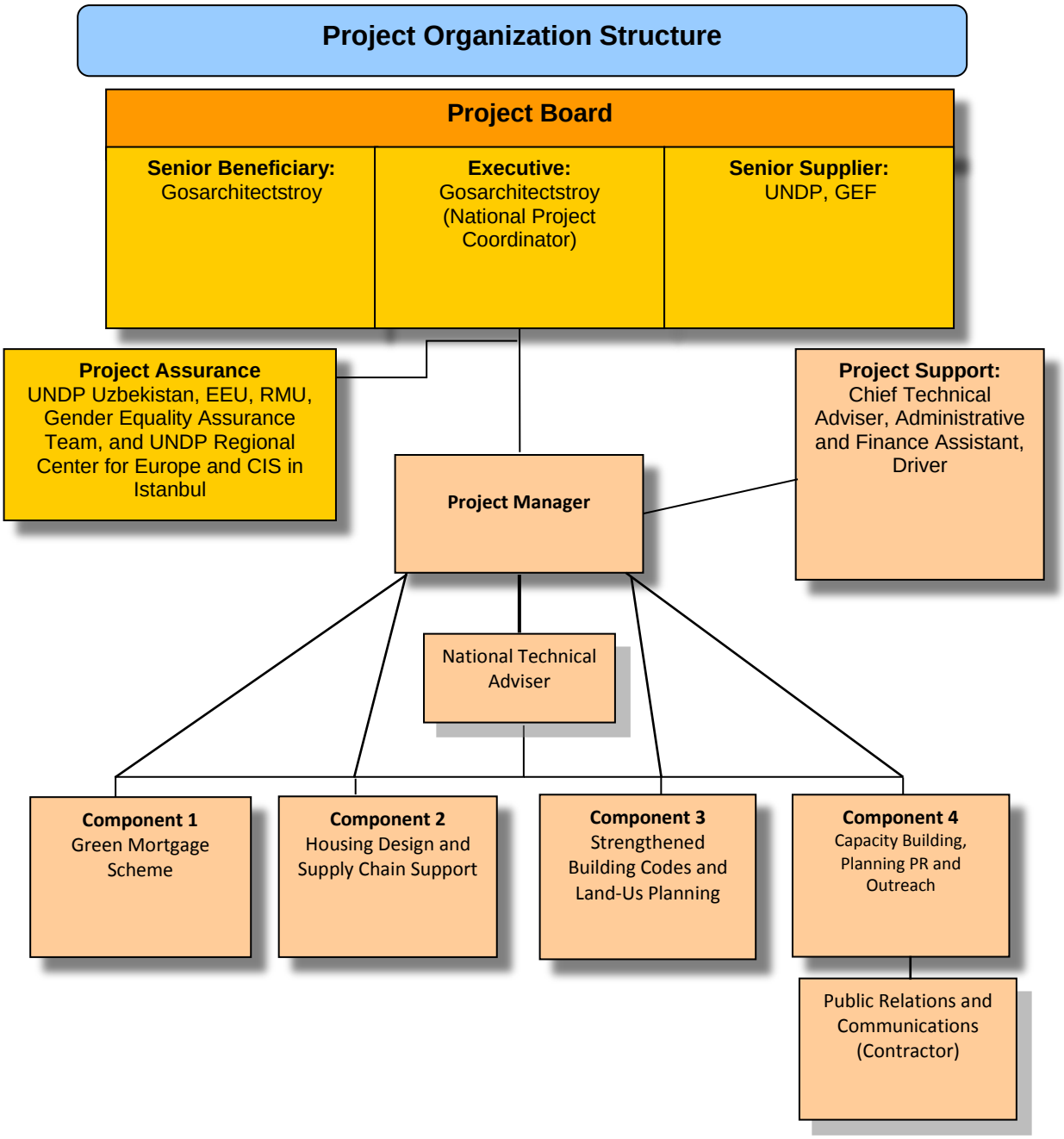
3. Support services to be provided:

	Description of services	Reimbursement amount based on the Universal Price List 2015 used by UNDP for cost recovery with other UN Agencies (in USD)	UNIT
1	Payment Process	29.85	Per voucher
2	Credit card payment	31.80	Per transaction
3	New vendor creation in ATLAS	15.44	Per vendor
4	Payroll validation	30.91	Per person, quarterly
5	Leave monitoring	4.42	Per person, quarterly
6	IC and SC recruitment, including	180.54	Per person
6a	Advertisement	36.11	
6b	Short listing	72.22	
6c	Contract Issuance	72.22	
7	Issue IDs	29.93	Per ID
8	F10 Settlement	24.82	Per item
9	Ticket request	24.40	Per ticket
10	Hotel reservation	10.97	Per booking
11	Visa request	20.00	Per person
12	Vehicle Registration	29.13	Per item
13	Procurement process involving local CAP or RACP/ACP	416.29	Per case
13a	Identification and selection	208.14	
13b	Contracting/Issue PO	104.07	
13c	Follow-up	104.07	
14	Procurement not involving review bodies	167.81	Per case
14a	Identification and selection	83.91	
14b	Contracting/Issue PO	41.95	
14c	Contract follow-up	41.95	
15	Disposal of equipment	211.73	Per lot

The total amount for provided support services will not exceed 179,500 USD.

Project Coordination Arrangements

The following organizational chart describes the relationships between the various stakeholders and the staffing arrangements for the project team.



Project Oversight and Guidance

The Project Board (PB) will provide overall guidance (see the Terms of Reference for the Project Board in **Annex 6**). The PB will include representation by the Gosarchitectstroy as the Executive and Senior Beneficiary and UNDP as the Senior Supplier. It will also include key national governmental and non-governmental agencies, and it may include representatives of local governments and self-government (makhallas and village councils) as appropriate. Independent third parties such as international organizations or national NGOs may attend augmented PB meetings as observers as well. The PB will be balanced in terms of gender.

The Project Board will be responsible for making management decisions for the project, in particular when guidance is required by the Project Manager (PM). 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 Project Board 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. In case a consensus can not be reached, final decision shall rest with the UNDP. Project reviews by PB are made at designated decision points during the running of a project (at least once a year), or as necessary when raised by the PM. In addition, it will approve the appointment and responsibilities of the PM and any delegation of its Project Assurance responsibilities. Based on the approved Annual Work Plan, the Project Board can also consider and approve the annual plan and also approve any modifications of the original plans.

In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance to standards[93] that shall ensure best value to money, fairness, integrity, transparency and effective international competition.

Potential members of the Project Board will be reviewed and recommended for approval during the Project Appraisal Committee (PAC) meeting. The Project Board will contain three distinct roles:

Executive Role: This individual will represent the project "owners" and will chair the group. It is expected that the Gosarchitectstroy will appoint a senior official to this role that will ensure full government support of the project and serve as the National Project Coordinator (the Terms of Reference for this position is provided in **Annex 6**).

Senior Supplier Role: This role requires the representation of the interests of the parties concerned that provide funding for specific cost sharing projects and/or technical expertise to the project. The Senior Supplier's primary function within the Board will be to provide guidance regarding the technical feasibility of the project. This role will rest with UNDP Uzbekistan represented by the UNDP RR/DRR or designated official.

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 Board will be to ensure the realization of project results from the perspective of project beneficiaries. The principal project beneficiary is Gosarchitectstroy but other project stakeholders listed below will be duly involved and consulted during the strategic decision-making and monitoring process during the augmented Project Board meetings.

Gosarchitectstroy, Ministry of Finance, Ministry of Economy, State Committee for Land, Geodesy, Cartography and State Cadastre, Centre of Hydro-meteorological Service under the Cabinet of Ministers of the Republic of Uzbekistan, State Committee for Nature Protection, Chamber of Commerce and Industries

[93] UNDP Financial Rules and Regulations: Chapter E, Regulation 16.05: a) The administration by executing entities or, under the harmonized operational modalities, implementing partners, of resources obtained from or through UNDP shall be carried out under their respective financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP; and b) Where the financial governance of an executing entity or, under the harmonized operational modalities, implementing partner, does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition that of UNDP shall apply.

of Uzbekistan, central and local authorities in rural regions, self-government bodies such as makhallas and village councils, and local communities will benefit from project results through development of their capacity to participate in the decision-making and progress-monitoring processes. In addition, all stakeholders will be covered by the corresponding training, education, and outreach activities, and will also benefit from an improved environment at the central, regional and local levels. These stakeholders can also establish an Inter-Agency Coordination Committee to provide advisory services and strategic recommendations to the Project Board and can meet either on regular (e.g. annually or quarterly) or ad-hoc basis.

Project Assurance: The Project Assurance role supports the Project Board Executive by carrying out objective and independent project oversight and monitoring functions. The Project Assurance role at the country level will rest with UNDP Uzbekistan (Environmental and Energy Unit (EEU) supported (when needed) by the Resource Management Unit (RMU) of the UNDP CO Uzbekistan.

Project Implementation

A *Project Team (PT)* will be established comprised of core staff including: the Project Manager (PM), and Project Administrative and Financial Assistant. The PT will assist the Gosarchitectstroy in performing its role as the National Implementing Partner. The PM will be recruited in accordance with UNDP's regulations to manage actual implementation of the project and will be based in Tashkent. The PM will be responsible for overall project coordination and implementation, consolidation of work plans and project papers, preparation of quarterly progress reports, reporting to the project supervisory bodies, and supervising the work of the project experts and other project staff. The PM will also closely coordinate project activities with relevant government institutions and hold regular consultations with other project stakeholders and partners. Under the direct supervision of the PM, Administrative Assistant and project Driver will be responsible for administrative and financial issues, and will get support from the existing UNDP administration. Chief Technical Adviser, National Technical Adviser and four Team Leaders of the project components will support PM in implementation of relevant thematic project activities based on their sound professional expertise (provisional TORs for the key project staff are provided in **Annex 7**).

To achieve the project outputs and implement the project activities, the Project Manager will also be supported by national experts (from research institutes, regional and local subdivisions , NGOs etc.) and international consultant(s) recruited by UNDP based on the approved Annual Plan on project activities. The PM will be responsible for the consultants' timely deliverables and their contributions to the overall project outputs.

The project outreach, awareness raising and results dissemination and replication activities will be under the responsibility of a part-time public relations contractor supervised by the Project Manager.

Gosarchitectstroy will provide office premises for the project team as well as telephone communication lines, and the required expertise and services of their corresponding staff. Local transport to demo sites, support of their relevant subdivisions and staff, and ensuring required access to relevant units will also be covered. This is considered as in-kind contribution to the project implementation to be provided by the Government of Uzbekistan. Members of the Project Board and the government Inter-Agency Coordination Committee will contribute to the project by making their personnel/staff and expertise available as and when required, as well as by participating in relevant expert, seminars, workshops or management meetings and/or providing meeting/teaching/storage venues/locales as and when required. Beyond workshops, seminars and sub-contractual arrangements for the provision of relevant technical expertise the NGOs will be actively engaged during the project implementation to provide essential feedback and guidance to the project so that it delivers on committed results in a way that is best fitted to local circumstances.

Use of institutional logos on project deliverables: In order to accord proper acknowledgement to UNDP and GEF for providing funding, UNDP and GEF logos will appear on all relevant project publications,

including, among others, project hardware. Any citation on publications regarding this project will also accord proper acknowledgment to UNDP and GEF.

Monitoring and Evaluation

1. MONITORING AND EVALUATION FRAMEWORK

Project monitoring and evaluation (M&E) will be in accordance with established UNDP procedures and will be carried out by the Project team and the UNDP Country Office. The Results Framework will define execution indicators for project implementation as well as the respective means of verification. Monitoring and evaluating system for the project will be established based on these indicators and means of verification. It is important to note that the Results Framework, together with the impact indicators and means of verification, will be fine-tuned during project formulation.

The project will be monitored through the following Monitoring and Evaluation (M&E) activities.

Project start-up:

A Project Inception Workshop will be held within the first 4 months of project start with those with assigned roles in the project organization structure, the UNDP Country Office (CO) and, where appropriate/ feasible, regional technical policy and programme advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan.

The Inception Workshop should address a number of key issues including:

i) Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP CO and RCU staff vis à vis the project team. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff will be discussed again as needed.

ii) Based on the project results framework and the relevant GEF Tracking Tool if appropriate, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.

iii) Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.

iv) Discuss financial reporting procedures and obligations, and arrangements for annual audit.

v) Plan and schedule Project Board meetings. Roles and responsibilities of all project organization structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 6 months following the inception workshop.

An Inception Workshop report is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

The **Inception Workshop** will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's implementation process, including reporting and communication lines, and conflict resolution mechanisms.

Quarterly:

- Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform.
- Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Note that for UNDP GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or

capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical).

- Based on the information recorded in ATLAS, a Project Progress Report (PPR) can be generated in the Executive Snapshot.
- Other ATLAS logs can be used to monitor issues, lessons learned etc. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

Annually:

Annual Project Review/Project Implementation Reports (APR/PIR): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period. The APR/PIR combines both UNDP and GEF reporting requirements.

The APR/PIR includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
- Project outputs delivered per project outcome (annual)
- Lesson learned/good practice
- AWP and other expenditure reports
- Risk and adaptive management
- ATLAS Quarterly Progress Reports (QPR)
- Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

Periodic Monitoring through site visits:

UNDP CO and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. The international expert undertaking independent monitoring, particularly in relation to environmental safeguards will be part of these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.

Mid-term of project cycle:

The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation. The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC).

The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

End of Project:

An independent Final Evaluation will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP and GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. This will include input from the Independent expert undertaking environmental safeguards monitoring on the overall environmental performance achieved in relation to ODS phase-out activities. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC).

The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

During the last three months, the project team will prepare the Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

Learning and Knowledge Sharing

Learning and knowledge sharing are discussed in greater detail in the relevant section of the project document on page 41 and in Table 11. Results from the project will be disseminated within and beyond the project intervention zone 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 though lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.

Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

Communications and visibility requirements

Full compliance is required with UNDP's Branding Guidelines. These can be accessed at http://intra.undp.org/coa/branding.shtml, and specific guidelines on UNDP logo use can be accessed at: http://intra.undp.org/branding/useOfLogo.html. Amongst other things, these guidelines describe when and how the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects needs to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The GEF logo can be accessed at: http://www.thegef.org/gef/GEF_logo. The UNDP logo can be accessed at http://intra.undp.org/coa/branding.shtml.

Full compliance is required with the GEF's Communication and Visibility Guidelines (the "GEF Guidelines"). The GEF Guidelines can be accessed at: http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf. Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items.

In terms of financial monitoring, the project team will provide UNDP with **certified periodic financial statements**, and UNDP will commission and oversee an **annual audit** of the financial statements relating to the status of funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted in accordance with UNDP Financial Regulations and Rules and applicable audit policies on UNDP projects by a legally recognized auditor.

The Monitoring & Evaluation plan is provided in the following section.

2. BUDGET FOR PROJECT MONITORING AND EVALUATION

Type of M&E activity	Responsible Parties	Budget, USD	Time frame
Inception Workshop (IW)	▪ Project manager ▪ UNDP CO, UNDP Regional Technical Advisor	$20,000	Within first two months of project start up
Inception Report	▪ Project manager ▪ UNDP CO	Staff time	Immediately following IW
Development of a Methodology for Measuring Building Performance and Related Emissions Reductions	▪ Oversight by UNDP Regional Technical Advisor and UNDP BDP as needed ▪ Short-term international consultant	$20,000	Immediately following IW
Measurement of Means of Verification for Project Purpose Indicators	▪ Project manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members, particularly the project staff and consultants tasked with project M&E, MRV systems, and GHG accounting.	$68,000	Start, mid and end of project
Measurement of Means of Verification for Project Progress and Performance (measured on an annual basis)	▪ Oversight by Project M&E Specialist and project manager ▪ Measurements by regional field officers and local PIU staff.	Staff time	Annually prior to APR/PIR and to the definition of annual work plans
Annual Project Review and the coordinated GEF Project Implementation Review (PIR)	▪ Project manager ▪ UNDP-CO ▪ UNDP Regional Technical Advisor	Staff time	Annually
Periodic status reports	▪ Project manager	Staff time	TBD by project manager and UNDP CO
Mid-term evaluation	▪ Project manager ▪ UNDP- CO ▪ UNDP Regional Technical Advisor ▪ External Consultants (evaluation team), both local and international	$25,000	At the mid-point of project implementation.
Terminal Evaluation	▪ Project manager, ▪ UNDP-CO, UNDP Regional Technical Advisor ▪ External Consultants (evaluation team)	$25,000	At the end of project implementation
Terminal Report	▪ Project manager ▪ UNDP-CO	Staff time	At least one month before the end of the project
Lessons learned	▪ Project manager ▪ UNDP-RBEC Regional Centre	$25,000	Yearly
Audit	▪ UNDP-CO ▪ Project manager	$30,000	Yearly
Visits to field sites	▪ UNDP Country Office ▪ UNDP Regional Technical Advisor ▪ Government representatives	$35,000	Yearly
TOTAL		$248,000	

M&E Budget Notes:

1 The item "Development of a Methodology…" includes the cost of a contract to develop a methodology and approach for monitoring energy savings during the project that accounts for unique features in the target monitoring population (e.g. suppressed demand) and the complex fuel mix; the contract will also cover the development of a methodology and approach for monitoring socio-economic aspects of the rural housing units designed and constructed under the project.

2 The item "Measurement of means of verification…" will include the cost of measuring energy savings directly and estimating savings indirectly in an agreed-upon number of project and control buildings. It will also involve the cost of contracts to measure socio-economic indicators. Finally, it will include the cost of structured surveys with beneficiaries in order to document the project results in a manner that goes beyond standard reporting on the implementation of project activities.

3 The Mid-Term Evaluation costs correspond to a team of international and national consultants and a technical review of project measurement to date.

4 The Terminal Evaluation costs correspond to a team of international and national consultants and a technical review of project measurement from the midpoint of project implementation to the project's conclusion.

5 Audit costs are estimated at $5,000 per year for six years.

3. SPECIAL M&E ISSUES RELATED TO ENERGY EFFICIENCY PROJECTS

Because the project will introduce energy-saving measures in homes in certain regions that may not have a steady supply of fuel and electricity, M&E efforts must consider suppressed demand when calculating the impact of the measures. Suppressed demand occurs when the energy services available to households are not sufficient to meet human development needs: e.g., energy services that are insufficient to provide insufficient heat (or power for cooling) to achieve recommended year-round indoor air temperatures, sufficient fuel for cooking, and sufficient power for daily activities. Suppressed demand sometimes occurs when energy services are not affordable, and at other times, it results from a lack of access. When energy becomes more accessible or affordable, consumption may actually rise, even when energy-saving measures are introduced. As a 2014 IEA report notes, "Some benefits can come with an energy consumption price tag (e.g. when improved energy affordability leads to increased consumption of heating). Where energy savings are 'taken back' in the achievement of health benefits, poverty alleviation, or improving productivity, the rebound effect can be viewed as having a net positive outcome, amplifying the benefits of the energy efficiency intervention."[94]

Project M&E activities will address the issue of suppressed demand in the following ways: 1) measuring energy availability (in the form of gas grid pressure and electricity grid supply) for the EE and Low Carbon houses and for a control group of standard houses under similar climatic conditions; 2) metering energy consumption for heat and power in the project houses and in a control group of houses; 3) measuring indoor household temperature in both sets of houses in order to provide an objective measure of comfort; 4) collecting self-reported data on occupants' health, productive activities, and daily activities through observations and/or surveys; 5) coordination with health monitoring projects to assess preliminary linkages between health status and housing conditions; and 6) periodic reviews of the literature on rural development in Uzbekistan. The final item can be used to calibrate certain findings. For example, research conducted on satisfaction with energy services in rural areas during the project preparation period[95] found that inhabitants experiencing energy outages or lack of access to a grid might still express satisfaction with energy services – an effect that requires further study.

[94] IEA (2014) *Capturing the Benefits of Energy Efficiency*: 23.
[95] Rudenko (2015): 13.

Legal Context

This project document shall be the instrument referred to as such in Article 1 of the SBAA between the Government of Uzbekistan and UNDP, signed on June 10, 1993.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the executing agency's custody, rests with the executing agency.

The Implementing Partner shall:

a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;

b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The Implementing Partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

The Audit will be conducted in accordance with UNDP Financial Regulations and Rules, and applicable audit policies on UNDP projects.

V. ANNEXES

Annex 1: List of Resources Consulted

Annex 2: Additional Background Information on the Green Mortgage Mechanism

Annex 3: Analysis of Aid-Funded Projects Complementarity

Annex 4: Stakeholder Overview and Analysis

Annex 5: Documentation of Stakeholder Consultations

Annex 6: Terms of Reference for Project Board and National Project Coordinator

Annex 7: Provisional Terms of Reference for Key Project Staff

Annex 8: Project Risk Log

Annex 9: Theory of Change

Annex 10: Technical Annex

Annex 11: Greenhouse Gas Emission Reductions Methodology and Calculations

Annex 12: UNDP Environmental and Social Screening Tool

Annex 12a: Brief Gender Analysis

Annex 13: Government Statement that the Project is Not Required to Undertake an Environmental Impact Assessment (EIA)

Annex 14: Project Linkages with Presidential Resolution PP-3242

Annex 15: Co-Financing Letters

Annex 1: List of Resources Consulted

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Annex 2: Additional Information on the Green Mortgage Mechanism

This annex is divided into three parts:

1. A description of how Green Mortgages work
2. Examples of green mortgages in practice internationally and how they have informed the design of the proposed mechanism in Component 1 of this project.
3. A financial analysis of EE and Low-Carbon Home Mortgages in Uzbekistan

Part 1: How Green Mortgages Work

Green mortgage initiatives typically create a consortium between a bank, the investor/developer, the homebuyer and a competent authority or expert organization to certify green residential projects that are environmentally responsible and energy efficient relative to the standard offer. As a result, these projects generate financial, social and environmental benefits. Increased energy savings and other financial benefits (such as improved occupant health and less frequent/lower home repair costs) substantially reduce the mortgage default risk, allowing the lender to lower the monthly interest rate while maintaining profit margins. This enables homebuyers to invest in a more energy-efficient and greener home while lowering their total monthly cost of ownership relative to a standard home.

The introduction of such a financial product enables significant progress toward energy-efficient buildings, improved uptake of green energy, reduced greenhouse gas emissions, reduced construction waste, and reduced toxicity of building materials compulsory for all new and existing residential buildings. Growing energy security concerns and rising energy costs reward residential projects that require less costly and scarce natural resources to build and operate. By contributing to the creation of homes eligible for green mortgages, residential investors and developers can facilitate a rapid and profitable transformation of the construction and real estate industry toward a low-carbon/green economy.

GREEN MORTGAGE PROGRAM DETAILS

The following described the key components of a housing certification and green mortgage program and highlights differences compared to processes for underwriting mortgages on standard homes (i.e., homes that do not have energy-efficient or low-carbon features).

CREATING CRITERIA FOR BUILDINGS ELIGIBLE FOR GREEN MORTGAGES

The project stakeholders charged with defining the necessary criteria to identify homes achieving superior energy efficiency and other environmental performance criteria must determine the necessary criteria and how those criteria will be assessed. There are existing "Green Homes" rating tools and methodologies that can be accessed to benefit from lessons learned from other markets while still maintaining the option of modifying the approach to make it relevant for local culture, industry, approaches, etc.

It is strongly suggested use a certification process that requires a selected level of energy performance (e.g. 96kWh/m^2/year) while allowing flexibility to each individual project and design team to pursue this target as it wishes subject to existing building codes. This approach ensures that projects can respect local culture and architectural traditions and choose the best building approach based upon each local site (e.g. suitability by solar incidence, local availability of building materials, etc.). Thus, the certification of homes eligible for green mortgages should set ambitious targets that must be met but remain flexible as to how they are met as long as the buildings achieve the performance standard.

The authority to administer this certification ("the Certifier") should train their staff. Clear guidelines of all criteria to be met (energy, materials toxicity, water use reduction, etc.) should be made available to the Project Developers and building industry.

PLANNING A LOW-CARBON RESIDENTIAL PROJECT

A residential Project Developer considering certifying their project can request a "Pre-Certification Review" with the Certifier to quickly assess the feasibility of obtaining certification for multiple residential buildings. The Project Developer then meets with the Certifier to discuss the project (site location, building approach, energy performance, pricing target, etc.) they intend to pursue. The process includes an estimated 2-hour meeting from which the Certifier will produce an initial indication of the feasibility in a point-by-point comparison with the established criteria.

NOTE: Project Developers are strongly advised to begin this process as early as possible, even before a site has been selected. Projects that have already begun construction can be considered for the Green Homes certification program, but they will be held to the same requirements as projects that pursued certification from inception.

REGISTRATION AND SIGNING THE "PRE-CERTIFICATION AGREEMENT"

The Project Developer wishing to proceed with the certification registers the project and pays the registration fee. The Certifier, working with the project team and the information already collected at the Pre-Certification Review further defines the achievable criteria. The certification recognizes the variation of different project sites, design approaches and other components by applying a series of points to different criteria and requiring only that a certain number of points are achieved and that selected mandatory criteria are respected. Therefore, if it is highly impractical for a project to achieve points for installing on-site Renewable Energy, the project could offset this deficiency by earning more points in Energy Efficiency.

The Project Developer and the Certifier agree upon which criteria will be achieved that provide the minimum score necessary - as indicated in document in the form of a "scorecard" of criteria indicating which points will be pursued as well as all mandatory requirements to satisfy the established criteria of a certified project.

A "Pre-Certification agreement" is signed by the Project Developer indicating the actions to be taken and the method upon which they will be assessed. Upon the signing of this document, the Project Developer can begin to promote their project as "Pre-Certified," informing potential buyers about the program and the green criteria they are pursuing. For those projects determined to be eligible by participating banks for the green mortgage program this is also the indicator that this residential project is likely to achieve qualification for the program. The responsibility to deliver the agreed upon the eligibility criteria rests solely with the Project Developer.

GUIDANCE REGARDING A CERTIFIED RESIDENTIAL PROJECT

The Certifier and a qualified energy auditor meet and advise the project's design team throughout the design, construction, and commissioning process to guide the project to successful achievement of the certification criteria. Using the criteria agreed to be pursued as listed in the Pre-Certification Agreement and encouraging "Integrated Design", the process is designed to ensure projects meet or exceed compliance with the program's requirements and produce no negative surprises at the conclusion of the project.

DESIGNATION OF THE RESIDENTIAL PROJECT AS A "CERTIFIED HOME"

Upon project completion, the Certifier reviews the project as constructed to confirm the criteria as agreed in the Pre-Certification Agreement have been achieved. Should the project be sold without appliances, the Project Developer must inform the prospective buyer of the obligation to install energy efficient appliances for major equipment (e.g. refrigerator, microwave, washing machine, etc.). The Certifier will check that the new owners are provided adequate information by the Project Developer to operate their home in an energy efficient and green manner. The project team is provided the final scorecard and either a notification of successful certification of the project or indications of remaining corrective actions to be taken.

ANALYSIS AND CREATION OF A "GREEN MORTGAGE" PRODUCT

The partner bank analyzes the potential cost savings of the home owner related to reduced energy use, repair costs, and health costs of the certified homes and the higher current and future valuation of the homes meeting the green criteria. A new financial product with discounted interest rates is then made available to homes that match both the financial underwriting and green criteria (the latter is considered achieved when the home receives the certification).

Conversations with the relevant authorities setting banking policy should be held to ensure that the objectives of the policy are upheld while allowing for flexibility where appropriate. A policy change, for example, could include allowing for higher loan-to-value ratios for issuing green mortgages for certified homes based on the higher predicted home values and greater disposable income of the borrowers.

PROMOTION OF THE "GREEN MORTGAGE" PRODUCT

The partner bank and other project stakeholders then educates potential home buyers–via brochures and other outreach materials–about the benefits of Green Homes and the benefits of borrowing responsibly to make the appropriate level of investment into the quality, energy efficiency and environmental performance of the home as an effective tool to improve the family's financial situation, comfort, health and contribution to protecting the local eco-system and global environment.

Additional educational campaigns can target residential Project Developers and other important companies / partners in the building process to understand the financial benefits of certified homes and the green mortgage program and how to effectively participate.

ADMINSTRATION OF THE "GREEN MORTGAGE" PRODUCT

With the exception of the additional criteria assessed and confirmed during the certification process, the green mortgage does not change the usual practices of the mortgage process. Financial underwriting remains essential, while the inclusion of green criteria ensure reduce mortgage default rates due to higher disposable incomes and decrease home and health-related costs to buyers.

MONITORING OF THE PROGRAM

Recipients of certification and a discounted green mortgage product must agree to share energy cost data from their homes and to operate the units as advised upon purchasing the home. The data will be useful to inform various project stakeholders (including the partner banks and funding agencies) of the environmental and financial outcomes of the program and contribute to future improvements.

Part 2: International examples of green mortgage projects and their influence on project design

ROMANIA

The Romania Green Building Council (RoGBC) is a non-profit, non-political association of the country's green building investors, solution providers and other relevant stakeholders working to deliver market, educational, and legislative conditions to promote high performance construction that is both environmentally-responsible and profitable. The organization promotes innovative financial tools for improving Romania's buildings including the "RoGBC Green Mortgage" program, advocates for local and national policy to provide property tax incentives for green buildings, organizes exemplary green building demonstration projects, provides the multi-disciplinary Green Building Professional education program, holds numerous awareness-building events on a variety of sustainable construction topics, and creates a

marketplace for green building solutions and projects. An overview of the roles of the various stakeholder is provided below in Figure A1.

Figure A1: Overview of Green Mortgage Stakeholder and Procedures in Romania

Initiated in 2007, the Green Mortgage program received the support of a major international bank operating in Romania but the subsequent financial and real estate crisis that dramatically affected the housing market suppressed any significant activity until 2013 when the market began to recover. The program follows the general green mortgage model described above. The criteria for energy and environmental performance, or the "Green Homes" certification, includes energy efficiency and green energy but also a substantial emphasis on healthy building materials, transit-oriented and walkable communities, use of appropriate building sites that do not harm or reduce ecologically important available land, and many other green components beyond energy use.

The program also offers companies who have relevant products, services, or technology to register as an "Approved Solution Provider" for the Green Homes program. After a review of the company's solutions and upon successful acceptance into the program, there is a nominal fee paid annually to the Council that helps support the non-profit organization's development and promotion of the Green Homes program nationwide. Building companies and residential Project Developers benefit from assistance in identifying relevant "pre-approved" solutions, which contribute to the successful achievement of a certified Green Homes project.

The RoGBC has advocated policy change to banks and the National Bank of Romania, which has in turn issued guidance to the mortgage lenders that they may include a credit to the defined income of the borrower based on the planned energy efficiency savings from Green Homes.

The RoGBC Green Homes and Green Mortgage program now has over 4,000 single family and multi-family units certified or pre-certified for inclusion in the program.

Case Study: VISION by Studium Green - Cluj-Napoca, Romania

This completed project of 177 apartments delivers nearly 40% energy savings relative to standard construction and is connected via public transit to the city center with easy, walk-able access to numerous facilities including shopping and schools. The residential project utilized an existing building super structure, abandoned from a prior development effort, to minimize resource use and construction waste. The sales prices of the homes ranged from 60.000 to 80.000 USD per unit. All units have been sold. It was the first Green Homes approved project certified by the Romania Green Building Council.

Case Study: Casa Solaris by Casa Solaris SRL - Voluntari, Romania

Casa Solaris is a single-family concept home located 2 kilometers to the North East of Bucharest that was completed in 2014 and is the first of a mini ensemble of 3 individual pilot homes. It is an "active house" – producing more energy than needed for its current operation – due to the contribution of its 72 sq. m of photovoltaic panels with surplus solar electricity being fed into the public grid. Casa Solaris is also equipped with 37 sq. m of thermal collectors used for both domestic hot water production and winter heating, using an innovative approach of underground storage of the summer heat surplus eliminating the need for a heat pump. Energy efficient construction and smart solutions for heating and cooling reduced the energy load to approximately 50 kWh/sq. m/year. The technology provides a healthy interior climate with controlled humidity and uniform temperature without undesirable air flows. The project developer chose to pursue the Green Homes "Pre-Certification" to attract investors for the development of 30 homes with a target price of 110,000 to 125,000 USD.

Lessons Learned that have informed Project Design: 1) Increasing the capacity of developers can boost the supply of housing that is eligible for green mortgages; 2) "Pre-approved" solutions and service providers can reduce time and costs for participants; 3) Professional education programs can increase interest in green mortgages among developers and architects; and 4) Demonstration projects can increase interest in green mortgages among homebuyers.

UNITED STATES

The most prominent green mortgage product in the United States is the *Energy Efficient Mortgage (EEM)*. EEMs are additional loan allowances granted to homebuyers based on the ability of energy-efficient solutions to repay the incremental cost of the loan. While the calculation of the amount of the additional

loan amount is separate from the initial underwriting of the home, the EEM amount is rolled into a single, larger loan resulting in one mortgage. EEMs may be granted for the purchase of existing homes or utilized to add energy upgrades to new construction that provides a higher energy performance standard than an average home. The mortgage lender is able to adjust the monthly income-to-loan payment ratio based on the higher disposable income of the homebuyer due to reduced energy expenses.

To initiate the process, the home buyer, either upon their own initiative or the recommendation of the mortgage lender, hires an energy expert to conduct a Home Energy Rating Service (HERS) Report which provides recommendations and a financial estimate of the available savings expected from the specific recommended solutions. The HERS Report provides an overall rating of 1 (most energy efficient) to 100 (least energy efficient) of the energy performance of the house, recommendations of cost-efficient energy efficient upgrades, estimates of the costs, annual savings and useful life of the upgrades, the potential rating score if recommendations are implemented, and estimated before and after annual costs of the home resulting from the energy upgrades. The cost of the HERS Report typically ranges from US$ 300 to US$ 800, and it is paid for by the buyer, seller, lender, or real estate agent depending on where the motivation lies. The estimated cost savings of the energy upgrades are used by the bank to increase the size of the loan to facilitate the purchase of those upgrades. Each recommended energy upgrade must demonstrate that it can generate positive financial returns over the life of the mortgage and within the expected useful life of the upgrade.

There are approximately 2,000,000 Energy Efficient Mortgages issued to homebuyers in the United States in 2015. Recent research of 71,000 homes in North America indicated a 32% reduction in mortgage default rates for homes that qualified as energy efficient (at levels of 15% improvement above code) versus standard homes.[96]

A 2015 survey of 30 commercial lenders across the United States[97] found that there was still a perceived lack of incentive for energy efficiency loans, partly because commercial banks did not sense strong consumer demand. The organization conducting the survey identified several areas where energy efficiency could generate more favorable loan terms (such as including energy savings into loan underwriting data), which in turn could increase demand for these investments.

Lessons Learned that have informed project design*:* 1) When a financial mechanism is used that relies on the bank to increase the size of the loan, recommended energy upgrades must demonstrate that they can generate positive financial returns over the life of the loan; 2) There is some indication that energy efficient homes may have lower default rates as opposed to standard home mortgages; and 3) Even when energy efficient mortgages are financially beneficial, consumers may be deterred by the extra paperwork; 4) Loan officers who are familiar with energy efficient mortgages and promote them to their clients can be very important tools for increasing the rate of these mortgages.[98]

MEXICO

The Institute for the National Workers' Housing Fund (INFONAVIT) developed a housing finance scheme to encourage the use of energy-efficient systems and technologies for low-income households. Mexico is an interesting case because it also features high demand for housing, rapid growth in the construction industry that has led to the use of materials that are not particularly energy-efficient, and a hot climate that drives increasing demand for electricity for air conditioning.

The "green mortgage" is not a whole home loan but rather a partial loan related to the purchase of energy-efficient and other green solutions. Families purchasing homes with INFONAVIT are provided an

[96] Sahadi et al. 2013.

[97] Kolstad 2016.

[98] Ibid. 2016.

additional loan on top of the actual mortgage of up to USD 1,250 to cover the purchase of additional green / low-carbon solutions. These solutions include energy saving lamps, roof and wall insulation, power management, efficient gas and solar water heaters, water-saving toilets and other fixtures, water filters, and waste separation containers.

The investments are made so that the additional monthly loan payment is lower than the savings in the monthly utility bill. In 2012, for example, average monthly mortgage payments were only about USD 6 more than a regular mortgage, while monthly savings on utilities totalled more than USD 17.[99] Semi-annual monitoring verifies energy savings and tracks the return on investment and consumer satisfaction.

The initiative aims to encourage Project Developers to build homes with energy-saving materials and technologies, and the low-rate mortgage given enables families to save more on their utility bills than the increase in their monthly mortgage payment. Project Developers must meet energy efficiency targets but have some flexibility in choosing how those targets are achieved. As of July 2014, over 1,600,000 Green Mortgage credits have been granted by INFONAVIT. The large demand for the credits has also resulted in stimulating competition in the construction industry as suppliers seek to be included on a list of pre-approved providers.

An additional initiative has recently been launched to provide larger grants of USD 7,000 to USD 17,000 from the European Commission's Latin American investment facility. These grants are being used to build 800 "Passive House" certified homes, which require no heat or cooling systems due to enhanced bio-climatic design and insulation.

Low-Carbon Houses in Mexico. Source: United Nations (www.un.org/climatechange)

Project outreach for the INFONAVIT housing finance scheme has been broad, and informational materials for homebuyers have ranged from a CD-ROM to a comic book.

***Lessons Learned that have informed project design*:** 1) Energy efficient mortgages can be very popular when savings are guaranteed; i.e., when the consumer knows that energy bill savings will be greater than the loan payment for investments in efficiency; 2) Nearly-Zero Energy houses can be used in a green mortgage program in a middle income country; 3) Water-saving measures can also generate utility savings and be included in a green home package; 4) On-going monitoring and evaluation is important to determine energy and financial performance, but also consumer satisfaction.

[99] See http://www.worldhabitatawards.org/winners-and-finalists/project-details.cfm?lang=00&theProjectID=9DA03455-15C5-F4C0-99170E7D631F50E9

CONCLUSION

The cases studied provided many ideas for promoting the green mortgage mechanism and generating demand among housing developers, builders, and buyers. They also highlighted common features that worked well: guaranteed savings, clear communication of these savings, and pre-approved solutions to achieve them. Furthermore, they identified barriers to loan placement that ranged from lack of awareness among underwriters and loan officers to extra paperwork.

In the short term, the Uzbek mortgage market is most amenable to the use of the subsidy proposed in Component 1 of this project. Mortgages that increase the amount of credit issued are not currently feasible, as RHP mortgages are capped by law at a maximum amount of 1,000 monthly minimum wages. Mortgages that are marketed on guaranteed savings are not currently feasible because of relatively low energy prices. However, the introduction of a green mortgage product for pre-approved EE and Low-Carbon houses is critical to market development, and it will generate some of the benefits of traditional green mortgage programs (market development for technology providers and increased interest in EE and Low-Carbon homes through the demonstration effect) in addition to energy savings and GHG reductions. The findings from the program will also be important to raising awareness among policy makers regarding secondary effects of utility subsidies, whereby low residential energy prices fail to provide market signals that would encourage energy-efficient housing.

In the longer term, there are indications that consumers in Uzbekistan would be interested in making investments in energy-saving housing technologies under certain tariff development scenarios. The following section of this appendix describes several scenarios for tariffs and the market conditions that could facilitate a transition to the broad replication of a green mortgage in Uzbekistan with a positive return on investment.

Part 3: A Financial Analysis of EE and Low-Carbon Home Mortgages in Uzbekistan

Integrating "green" principles in building residential housings has been the mainstream of policy measures directed to facilitate the transition to the green economy. Sustainable buildings use energy, water and land resources more efficiently and they create more productive and healthier work places and living environment. Moreover, sustainable buildings are considered cost-effective because they reduce operations and maintenance costs and lower utility bills. As previously mentioned, although the up-front investment in green houses is higher than the cost of the construction of conventional houses, the financial, social and environmental benefits generated by exceed the higher initial costs when these benefits and costs are estimated and compared through a life cycle cost methodology.

In Uzbekistan, homeowners, developers and public agencies do not currently recognize the full financial benefits of green buildings, mainly because of the lack of information about the benefits of sustainable buildings supported with solid quantitative estimates. The project preparation team therefore commissioned a study to estimate the financial benefits of greening rural housing in Uzbekistan.[100]

This section provides an initial analysis of three aspects of the potential design of a green mortgage scheme: (i) the tariff scenario, (ii) the incremental up-front cost of green rural housing and (iii) the total cost of ownership under the green mortgage scheme. Illustrative assumptions have been made with regard to tariffs scenarios, as well as with regard to the design features of the green mortgage scheme itself. The final design of the green mortgage scheme will be a function of further detailed analysis in the implementation phase.

[100] CER (2015).

Part 3.1 Tariff Scenarios

The study used a life cycle costing (LCC) approach to evaluate and integrate the benefits and costs associated with sustainable buildings. Survey data also provided some indication of consumer willingness to invest in energy-efficiency and renewable measures. For example, 80% of households surveyed expressed an intention to invest in energy efficiency if the payback period of such investments were fewer than five years. This finding illustrates that tariff policy plays an important stimulating role, and the development of tariff scenarios is required to conduct life cost analysis. In addition, a survey conducted by CER (2015) found that only 33% of surveyed households were willing to invest in energy efficiency if the tariff for natural gas increased by 15-20%, while 72% of households surveyed stated a willingness to improve the energy efficiency of their houses if tariffs for natural gas increased by 30-50%.[101]

Tariff scenarios for natural gas

Based on the survey findings above, three scenarios for tariff policy were developed for natural gas:

1. Scenario 1.This scenario assumes that the price of natural gas follows its historical trend: 15% increase annually
2. Scenario 2. This scenario is developed under assumption that the price of natural gas under this scenario is high enough to induce people to invest in energy efficiency: a 20% initial increase followed by a 17% annual increase in subsequent years
3. Scenario 3. This scenario assumes that new price for natural gas will be enough to cover long-run average costs of producers and providers: an initial 25% increase followed by an annual increase of 19% in subsequent years

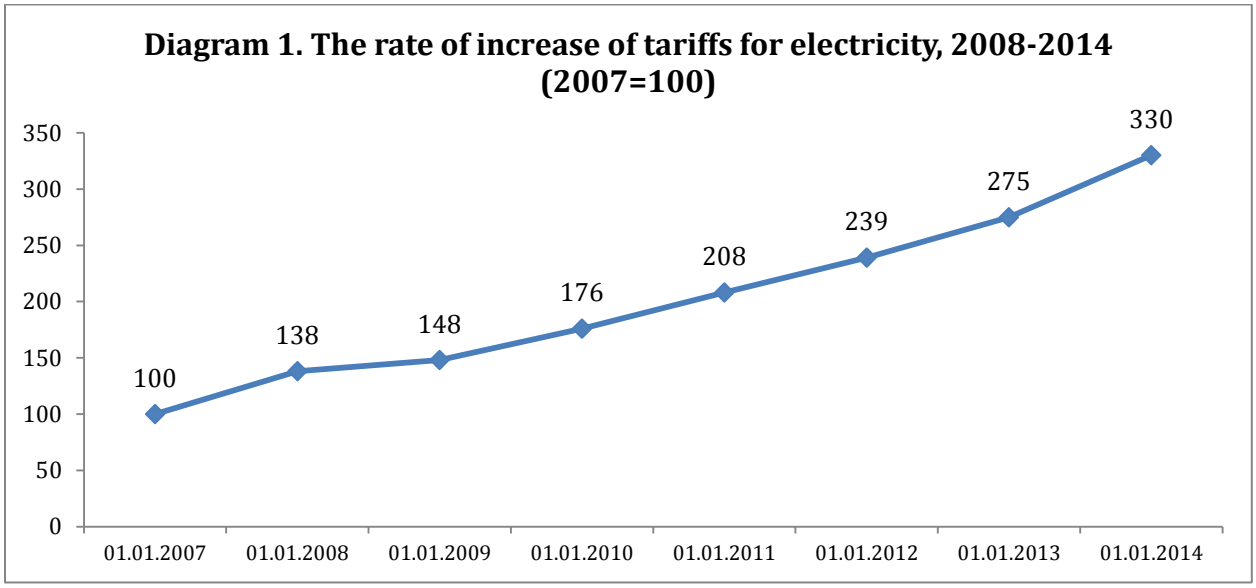
Tariff scenarios for electricity

Analysis was based on three scenarios of tariff policies for electricity based on the historical trend analysis of the price of electricity and cost structure of electricity:

1. Scenario 1. It assumes that the price of electricity follows its historical trend: 16% increase annually. Figure A2.1 shows tariff dynamics for electricity from 2008 to 2014. There is a sustainable upward trend, and the average rate of increase is 16% per year.

[101] Source: CER.

Figure A2.1: Historical Rate of Increase in Electricity Tariffs, 2008-2014



2. Scenario 2. This scenario is developed under assumption that the price of electricity under this scenario is high enough to induce people to invest in energy efficiency: 20% increase initially, 21% increase annually further.
3. Scenario 3. This scenario assumes that new price for natural gas will be enough to cover long-run average costs of producers and providers. We expect the decrease in the cost of production of electricity due to the fall of world prices of energy (that is 60% of total cost of production[102]). However, modernization and reconstruction costs of production capacity are expected to increase due to the realization of recent government programs directed to the modernization of electricity producing companies and improving energy efficiency. Estimates indicated that a 25% increase initially and 26% annual increase after that would provide enough financial resources to cover the long-run average costs of producers.

Part 3.2 - Estimates of the upfront-cost of green rural housing

Increasing energy efficiency of buildings by introducing "green" principles in the construction and reconstruction of houses in rural areas requires high capital expenses and payback period of these expenses depends on the amount savings obtained through energy efficiency.

The proposed UNDP-GEF project proposes two options of green investment in a typical rural housing: Energy Efficient (EE) house and Low Carbon house (LC), which are described in greater details in Annex 10. The difference between two investment options is explained in Table A2.1.

[102] Source: Uzbekenergo

Table A2.1: Comparison of the EE House and the Low-Carbon House

EE House Features & Cost		**Low-Carbon House Features & Cost**	
Window Treatment	$ -	Window Treatment	$ -
Insulation (walls)	$ 661	Insulation (walls)	$ 661
Insulation (floors)	$ 921	Insulation (floors)	$ 921
Radiator Treatment	$ 208	Radiator Treatment	$ 208
		Solar PV Lighting	$ 1,990
Total Incremental Cost to standard home	$ 1,790	**Total Incremental Cost to standard home**	$ 3,780

Life cycle cost estimates for investments made over the 2016-2021 period in green housing indicate that the present value of savings generated by the implementation of energy efficiency measures through less use of energy will not cover fully the upfront capital costs (see Table A2.2). In the EE house green investment option, up to 31% of up-front capital costs can be covered with savings, while savings generated from the Low-Carbon house green investment option cover only 19% of green premium.

Table A2.2: Life cycle cost estimates[103] resulting from green investments in rural houses, 2016-2021

	Scenario 1	**Scenario 2**	**Scenario 3**
EE Home			
Present value of savings from the less use of energy	$482.99	$528.06	$576.35
Green premium	$1,790	$1,790	$1,790
Savings/green premium	**27%**	**30%**	**32%**
LC Home			
Present value of savings from the less use of energy	$574.43	$650.75	$719.99
Green premium	$ 3,780	$ 3,780	$ 3,780
Savings/green premium	**15%**	**17%**	**19%**

Part 3.3: The total cost of ownership under the green mortgage scheme

Analysis: Green mortgages in which part of the additional cost is assumed by the homebuyer

While the initial mortgage offering in the project proposal will offset the incremental costs of EE renewable materials and technologies in the pilot houses, it is envisioned that with increasing institutional and

[103] Net present value (NPV) was calculated using a discount rate of 9%.

consumer awareness, the green mortgages could transition to financing that would be covered in part on in full by the homebuyer.

For example, Table A2.3 provides an overview of how a green mortgage would be financed to cover the costs of the EE house proposed in the project with a smaller subsidy to the down payment.

Table A2.3: Overview of a possible mortgage for the EE House

Cost of EE House	(USD)	$ 61,573
Percentage Loan to Value	(%)	77.1%
Percentage Downpayment	(%)	22.9%
Mortgage Size	(USD)	$ 47,458
Ratio of Minimum Wage	*(x)*	*1,030 x*
Total Downpayment Size (Upfront and at Commissioning)	(USD)	$ 14,115
Years 1-5 - Interest Rate	(%)	6.750%
Years 1-3 - Monthly Payment (Principal & Interest)	(USD)	$ 267
Years 4-5 - Monthly Payment (Principal & Interest)	(USD)	$ 482
Years 6-15 - Interest Rate	(%)	8.100%
Years 6-15 - Monthly Payment (Principal & Interest)	(USD)	$ 511
Total Interest Payments for 15 Year Mortgage - All 3 Phases	(USD)	$ 36,074
Years 1-3 - Grace Period	(USD)	$ 10,620
Years 4-5 - Low Cost Mortgage	(USD)	$ 6,059
Years 6-15 - Central Bank Linked Rate	(USD)	$ 19,395

Compared to a standard mortgage, the EE mortgage will cost $1790 more because of the following "Green" measures: insulation of walls and roofs, and radiator treatment. Homeowners preferring an EE mortgage will have to pay an additional $410 as a down payment, and their monthly payments will also increase due to the larger amount of mortgage (Table A2.4). A homeowner will pay $368 more interest payments during the lifetime of a mortgage. However, the EE mortgage scheme would feature a reduced interest rate during the first five years of a mortgage and a reduced down payment as a subsidy to decrease the burden of green cost premium: the cost of subsidy for incremental cost of down payment would be $410 and the cost of the subsidy for reduced interest rate during the first five years would be $507.

Table A2.4: Incremental costs for green mortgage in reference to Standard Home

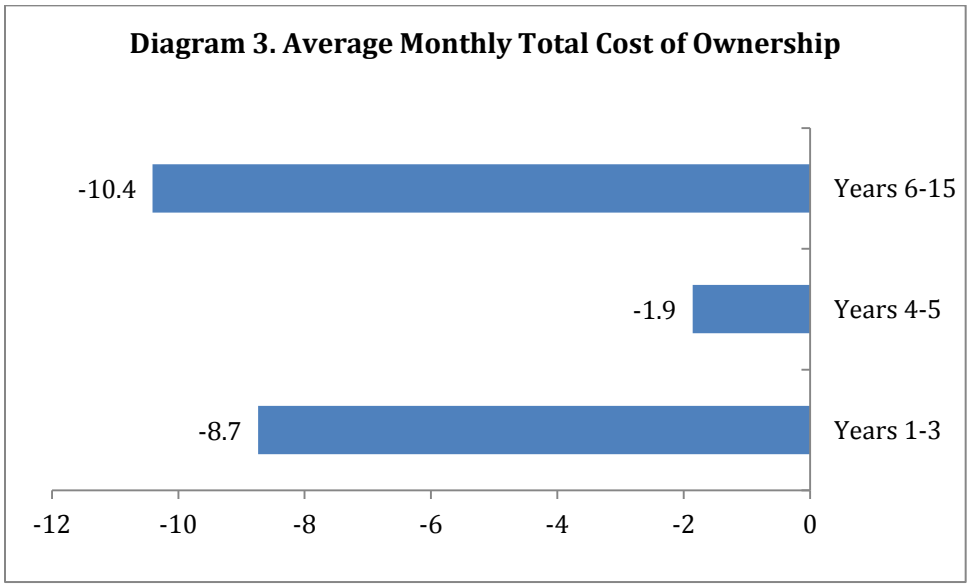
Upfront Incremental Cost - Total	(USD)	$	1,790
Covered by mortgage	(USD)	$	1,380
Covered by down payment	(USD)	$	410
Incremental Cost of Each Monthly Payment (Principal & Interest)			
Years 1-3 - Grace Period	(USD)	$	(1.84)
Years 4-5 - Low Cost Mortgage	(USD)	$	7.89
Years 6-15 - Central Bank Linked Rate	(USD)	$	13.93
Incremental Total Cost of Interest Payments - Mortgage Lifetime	(USD)	$	368
Years 1-3 - Grace Period	(USD)	$	(113)
Years 4-5 - Low Cost Mortgage	(USD)	$	(47)
Years 6-15 - Central Bank Linked Rate	(USD)	$	529

Although homeowners would pay a small amount more for their mortgage, they would benefit from savings generated from less use of natural gas and electricity. The economic benefits for the homeowner depend on the development of energy tariffs over time.

Scenario 1

Estimates show that average monthly energy savings is $6.90 during grace period, $9.74 during low-cost mortgage period and $24.34 during central bank rate linked period. As a result, average monthly total cost of ownership of energy efficiency house becomes negative number or converts into savings (see Figure A2.2)[104].

Figure A2.2: Average monthly total cost of EE home ownership under Scenario 1 (USD)



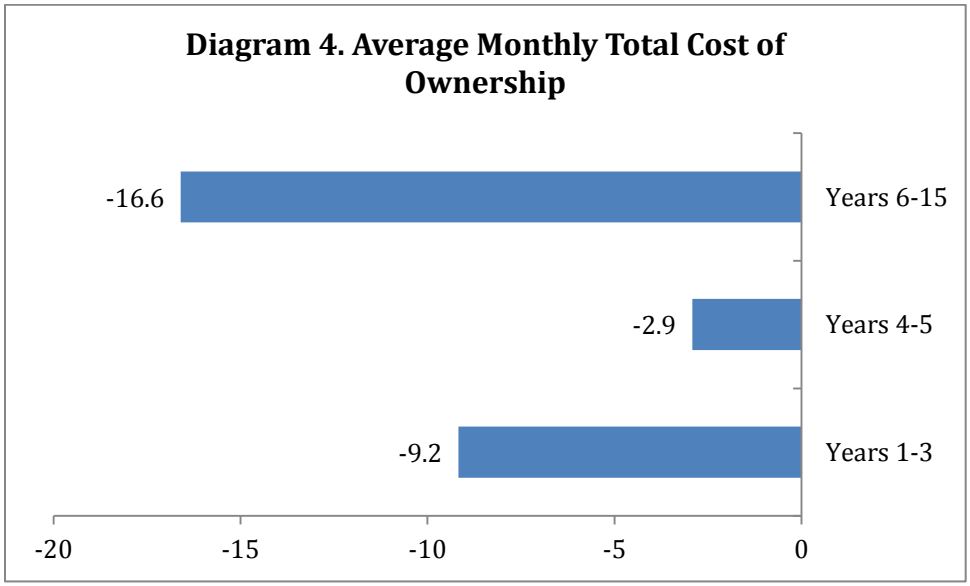
[104] Average monthly total cost of ownership of energy efficiency house is calculated as the difference of incremental cost of monthly mortgage payment and average monthly energy savings.

The net present value of cash flow is $780 that shows the present value of monetary return to the homeowner of green mortgage: energy savings fully cover incremental cost of mortgage and generate additional $780 monetary reward. Moreover, if the calculations monetized the financial benefits of green buildings in terms of reduced emissions, waste and water value, decreased operating and maintenance cost value and improved productivity and health value during lifetime of a house, the net present value of these benefits would be significantly greater than the "green cost premium."[105]

Scenario 2

Under scenario 2, average monthly energy savings is $7.30 during grace period, $10.80 during low-cost mortgage period and $30.50 during the last ten years of a mortgage. As a result, average monthly total cost of ownership of energy efficiency house becomes negative number or converts into savings (see Figure A2.3).

Figure A2.3: Average Monthly Total Cost of EE Home Ownership under Scenario 2 (USD)



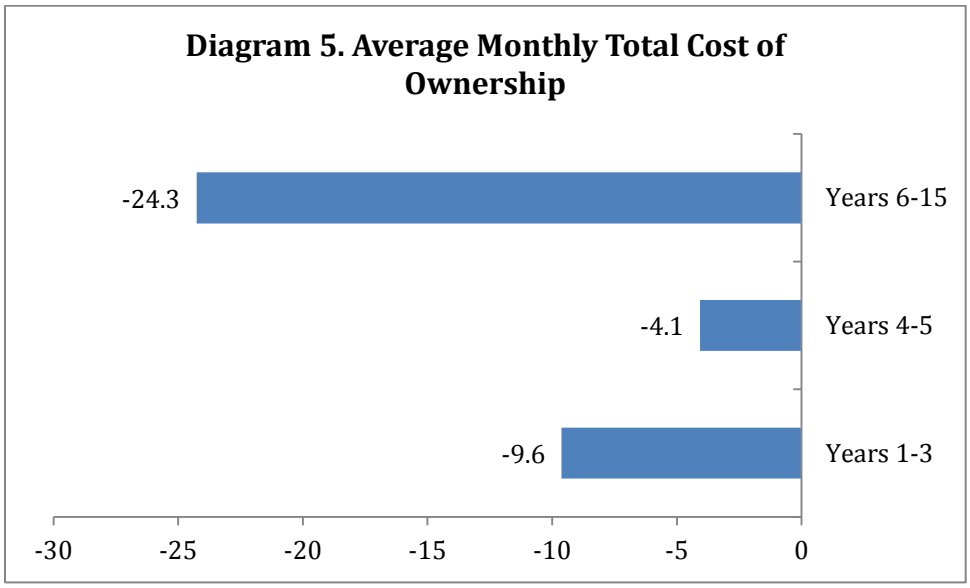
The present value of monetary return to a homeowner is $1,115, which constitutes 62% of green cost premium.

Scenario 3

Under Scenario 3, average monthly energy savings is $7.80 during grace period, $12 during low-cost mortgage period and $38 during central bank rate linked period. As a result, average monthly total cost of ownership of energy efficiency house becomes negative number or savings (Figure A2.4).

[105] Source: Kats, G. et. al. (2003).

Figure A2.4: Average Monthly Total Cost of EE House Ownership under Scenario 3 (USD)



As a result, savings from green investment fully covers the green premium and generates additional $1,520 monetary reward.

The Low-Carbon Home Mortgage

The details of the proposed Low-Carbon mortgage scheme are provided in Table A2.5.

Table A2.5: Overview of a possible mortgage for the Low-Carbon House

Cost of Low-Carbon House	(USD)	$ 63,563
Percentage Loan to Value	(%)	77.1%
Percentage Downpayment	(%)	22.9%
Mortgage Size	(USD)	$ 48,992
Ratio of Minimum Wage	*(x)*	*1,063 x*
Total Down Payment Size (Upfront and at Commissioning)	(USD)	$ 14,571
Years 1-5 - Interest Rate	(%)	6.750%
Years 1-3 - Monthly Payment (Principal & Interest)	(USD)	$ 276
Years 4-5 - Monthly Payment (Principal & Interest)	(USD)	$ 497
Years 6-15 - Interest Rate	(%)	8.100%

Years 6-15 - Monthly Payment (Principal & Interest)	(USD)	$	528
Total Interest Payments for 15 Year Mortgage - All 3 Phases	(USD)	$	37,240
Years 1-3 - Grace Period	(USD)	$	10,963
Years 4-5 - Low Cost Mortgage	(USD)	$	6,255
Years 6-15 - Central Bank Linked Rate	(USD)	$	20,022

Compared to a standard mortgage, the Low-Carbon mortgage would cost $3,780 more because of the following measures: insulation of walls and roofs, radiator treatment, and a solar PV system for lighting. Homeowners selecting the Low-Carbon mortgage would have to pay an additional $866.50 in their down payment, and their monthly payments would also increase due to the larger amount of the mortgage (see Table A2.6). As a result, a homeowner would pay $1,534 in additional interest payments during the lifetime of a Low-Carbon mortgage. However, green mortgage scheme would feature a reduced interest rate for the first five years of the mortgage and a partially-subsidized down payment to decrease the burden of the green cost premium: the cost of the subsidy for incremental cost of down payment would be $866.50 and the cost of the subsidy for the reduced interest rate for the first five years would be $523.

Table A2.6: Incremental costs for Low-Carbon mortgage compared to a standard RHP mortgage

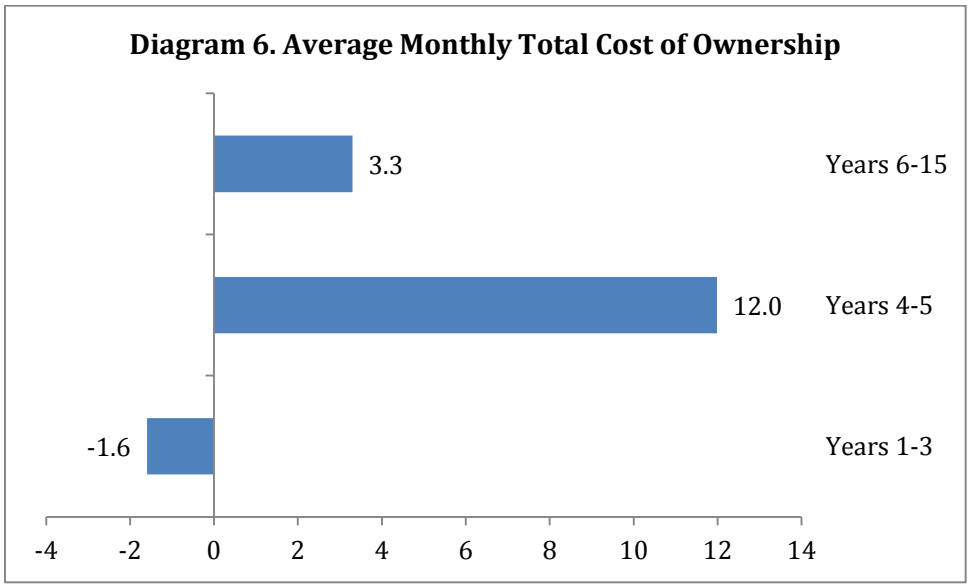
Upfront Incremental Cost - Total	(USD)	$	3,780
Covered by Mortgage	(USD)	$	2,913
Covered by Downpayment	(USD)	$	867
Incremental Cost of Each Monthly Payment (Principal & Interest)			
Years 1-3 - Grace Period	(USD)	$	6.79
Years 4-5 - Low Cost Mortgage	(USD)	$	23.46
Years 6-15 - Central Bank Linked Rate	(USD)	$	30.46
Incremental Total Cost of Interest Payments - Mortgage Lifetime	(USD)	$	1,534
Years 1-3 - Grace Period	(USD)	$	230
Years 4-5 - Low Cost Mortgage	(USD)	$	149
Years 6-15 - Central Bank Linked Rate	(USD)	$	1,155

Although homeowners would pay more money for their mortgages, they would benefit from savings generated from the reduced consumption of natural gas and electricity. Benefits would depend on the dynamics of tariff increases.

Scenario 1

Under Scenario 1, the average monthly energy savings would be $8.40 during grace period, $11.50 during the low-cost mortgage period, and $27.20 during the final years when the mortgage was linked to the central bank rate. The homeowner's average monthly total cost of ownership is depicted in Figure A2.5.[106]

Figure A2.5: Average Monthly Total Cost of Low-Carbon House Ownership under Scenario 1 (USD)



Under Scenario 1, the net present value of savings is -$473, which represents the net present value of the monetary cost of a Low-Carbon mortgage to the homeowner: energy savings are not enough to cover incremental costs generated by the green premium. However, if the estimate monetized the financial benefits of the Low-Carbon houses in terms of reduced emissions, waste and water value, decreased operating and maintenance cost value and improved productivity and health value during lifetime of the house, the net present value of these benefits would be significantly higher than the green cost premium.[107]

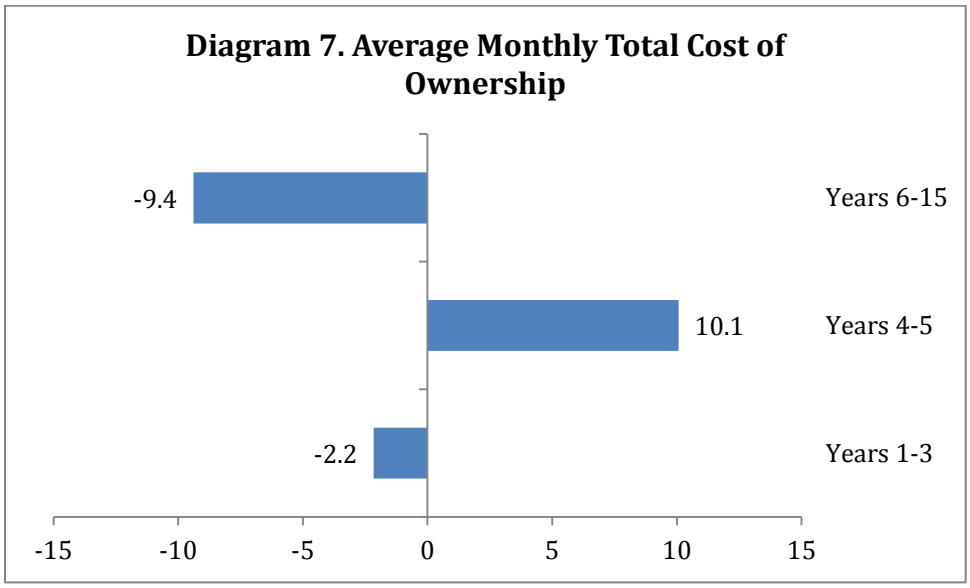
Scenario 2

Under Scenario 2, average monthly energy savings is $9 during the grace period, $13.40 during the low-cost mortgage period, and $40 during the last ten years of a mortgage. As a result, the average monthly total cost of ownership of the Low-Carbon house becomes a negative number; i.e., it converts into savings (see Figure A2.6).

[106] Average monthly total cost of ownership of energy efficiency house is calculated as the difference of incremental cost of monthly mortgage payment and average monthly energy savings.

[107] Source: Kats, G. et. al. (2003).

Figure A2.6: Average Monthly Total Cost of Low-Carbon House Ownership under Scenario 2 (USD)

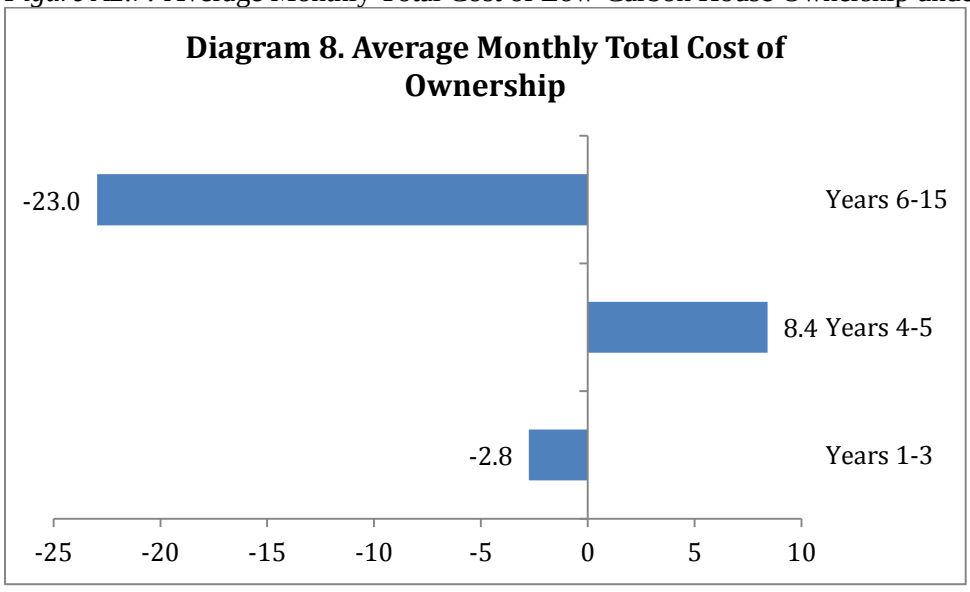


The net present value of savings is $197, which shows the present value of monetary return to the Low-Carbon homebuyer: energy savings fully cover the incremental cost of the mortgage and generate an additional $197.

Scenario 3

Under Scenario 3, monthly energy savings average $9.50 during the grace period, $15 during the low-cost mortgage period and $53.40 during the final ten years of the mortgage.. As a result, the average monthly total cost of ownership of energy efficiency house converts to a negative number; i.e., savings (see Figure A2.7).

Figure A2.7: Average Monthly Total Cost of Low-Carbon House Ownership under Scenario 3 (USD)



The net present value of savings is $895, which shows that the present value of monetary return to the homebuyer using a Low-Carbon mortgage. Energy savings fully cover the incremental cost of mortgage and generate an additional $895 that accrues to the homebuyer.

Annex 3 Analysis of Aid-Funded Projects Complementarity

Project name	Description	Potential Duplication and Synergies
1. UNDP-GEF Adaptation Fund: "Developing Climate Resilience of Farming Communities in Drought-Prone Parts of Uzbekistan"	**Objective:** This project, which is implemented in partnership with the Hydrometeorological Service of Uzbekistan (Uzhydromet) and which began in May 2014, is designed to increase climate resilience in farming and pastoral communities in the drought prone parts of Uzbekistan, specifically Karakalpakstan. The project will help the central, regional and local governments and vulnerable farmers and pastoralists to withstand the current and future impacts of climate change.	No Duplication. The proposed rural housing project will coordinate with this project in order to benefit from its contacts with farming and pastoral communities and to share project outputs on improved capacity for land use planning and zoning in rural areas.
2. UNDP: "Local Governance Support Program/Phase-II"	This project, which started in 2014 and will run through December 2017, is designed "to promote more effective, accountable and inclusive governance in Uzbekistan, by enhancing local government performance, increasing citizen participation in local governance, and supporting accountability and transparency" and "to increase the capacity of regional and district level authorities to manage the increased decentralisation and de-concentration of administrative and fiscal authority."	No duplication. The proposed rural housing project will draw upon the project's experiences with regional and district level authorities in its capacity strengthening and awareness raising activities and will share information materials on local planning and climate change to be developed under the project with these stakeholders.
3. **UNDP/UNEP/WRI/ GCF:** "Uzbekistan Green Climate Fund Readiness Framework: An approach to building climate finance readiness through national systems"	Uzbekistan has been selected for the Green Climate Fund Readiness Programme, and a project proposal is currently being developed (USD 1.6 million over a 2-year period). The German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) is providing the funding,	No duplication. The rural housing project will communicate with this program in the area of capacity strengthening, awareness raising, and good practice in M&E. It will also share its experience with the project development and implementation process and use a "learning by doing" approach to capacity strengthening among government counterparts.

4. **UNEP-GEF:** "Enabling Activity to Support the Third National Communication of the Government of Uzbekistan to the UNFCCC"	This project, which is conducted in partnersip with the Hydrometeorological Service of Uzbekistan (Uzhydromet) will produce the country's Third National Communication to the UNFCCC.	The proposed rural housing project will communicate with this project, particularly regarding the chapters of the communication regarding sectoral GHG emissions, GHG mitigation, and activities under Article 6 of the UNFCCC.
5. World Bank-GEF Sustainable Agriculture and Climate Change Mitigation Project	This project, which is scheduled to run through the end of 2016, is designed to promote energy-efficient and renewable energy technologies that are relevant to agribusiness and farms and to strengthen the capacity to improve degraded land and water conservation in project areas.	The proposed rural housing project will communicate closely with this project regarding technology promotion and capacity strengthening.
6. World Bank Advanced Electricity Metering Project	The project, which began in 2012 and is scheduled to run until mid-2017, is designed to reduce commercial losses in three regional power distribution companies and create an energy data management system billing/archive system.	The proosed rural housing project will communicate closely with this project regarding the software/hardware elements of its pilot energy data management system and will study the project's lessons learned from its outreach activities targeting consumers.
7. UNDP-GEF Small Grants Programme (SGP).	The goal of the SGP is to promote the improvement of global natural environment via implementation, by means of local people, of local initiatives designated to preserve and restore the environment by implementing and replicating sustainable natural resources management practices that improve people's livelihoods.	No duplication. The SGP covers small-scale projects, and it is not designed for long-term projects. Some of the small-scale projects implemented by the SGP have energy efficiency benefits and lessons that will be taken into account and considered for application in the framework of the proposed project. The use of successful experiences of these projects will allow the proposed UNDP-GEF project to spread them to other districts and throughout Central Asia through its information dissemination activities.

Annex 4 Stakeholder Analysis

Type of Stakeholder	Name of Stakeholder	Relevance to Project, Role in Preparation, and Role in Implementation
Government	Gosarchitectstroy	Gosarchitectstroy will serve as the national implementing partner for the project due to the following factors: 1) Its mandate for and expertise in developing and enforcing state policies in the building sector; 2) Its leading role in implementing all state-funded construction programs, including the National Investment Programme "Housing for Sustainable Rural Development"; and 3) Its prior experience and leading role in designing and implementing successful international projects and initiatives on sustainable buildings, such as the UNDP-GEF "Energy Efficiency in Public Building" project. It has also served as the National Implementing Partner for project preparation activities. Gosarchitectstroy is providing both cash and in-kind co-financing to support project activities and project management.
	Ministry of Economy	The Ministry defines the exact geographical and financial scope of the National Rural Housing Program implementation on annual basis. It also approves the final technical design of houses to be constructed and the investment from national budget. The ministry has been consulted on multiple occasions regarding the project design and activities. The project team will coordinate with the Ministry regarding the final locations of project activities and other investment details regarding the financing mechanism(s). Furthermore, the project will coordinate the exchange of information and experience with the Ministry's Center for Economic Research, which has provided inputs and background research to the project design. Specifically, it will follow the Center's research on tariffs and will learn from its work with the World Bank on gas and water supply. Furthermore, the project will share its experience with solar PV units and other EE and renewable techonologies to inform the Center's work on green procurement.
	Ministry of Finance	The Ministry of Finance is provides the annual allocation in the state budget for the National Rural Housing Program and is the government agency that handles sovereign lending and ODA. The project preparation team has verified that the proposed project reflects planned expenditures in rural housing and rural development as forecast by the Ministry.
	National Bank of Uzbekistan (NBU)	NBU, the central bank, has a loan agreement with the Asian Development Bank for the Rural Housing Programme loan. The NBU will work with the project to develop and implement the green mortgage mechanism, and it will train its employees to appraise and process green mortgages.
	Uzhydromet	The mandate of this State Agency includes climate change, and it oversees the preparation of National Communications and Biennial Update Reports to the UNFCCC. Uzhydromet also houses the GEF Focal Point. It serves as the National Dedicated Authority for projects under the Green Climate Fund, and it has served as the Designated National Authority for projects prepared for financing under the Clean Development Mechanism. The project preparation team has consulted the agency regarding potential cooperation in areas such as technology

Type of Stakeholder	Name of Stakeholder	Relevance to Project, Role in Preparation, and Role in Implementation
		needs assessment, MRV practices in the buildings sector, and top-down and bottom-up emissions forecasting for the buildings sector as a whole.
	The State Committee of the Republic of Uzbekistan on Land Resources, Geodesy, Cartography and State Cadastre	The State Committee oversees land-use planning issues in Uzbekistan and was consulted regarding baseline capacity and capacity needs in land-use management and land-use planning in rural areas. The State Committee will be involved in Sub-Component 3.3, which is designed to increase energy savings due to good practice in town planning and land use.
	State Committee for Nature Protection	The Committee develops and implements the unified nature protection and natural resources saving policy, state control over environment protection, comprehensive inter-agency management of nature protecting activities through wider and primarily application of the corresponding economic approaches and use of natural resources, promoting the nationwide introduction of resources saving, recycling and/or waste-free technologies as well as advanced R&D. It also is responsible for safe and clean environment and its improvements. It will provide strategic and technical advisory on national environment protection policy related to the project activities.
	Regional and district municipal authorities	This group will be consulted on their training and capacity strengthening needs in the area of land use planning and zone, particularly regarding the integration of climate change considerations into local decision-making.
	Local self-governance units; i.e., Makhallas and Village Citizen Assemblies (сельский сход граждан)	These groups will also be consulted on their training and capacity strengthening needs in the area of land use planning and zone, particularly regarding the integration of climate change considerations into local decision-making.
	Employees in rural health and educational facilities	UNDP has standing relationships with rural health and educational facilities due to previous projects, and experiences from those projects have been incorporated into the design of this project. The project team will consult with this group during implementation regarding their potential role in demonstrating technologies (in areas where they have been piloted in public buildings) and in disseminating project-related information.
Private Sector	Commercial Banks such as Qishloq Qurilish Bank and Ipoteka Bank	Qishloq Qurilish Bank (Rural Construction Bank) is responsible—in conjunction with Gosarchitectstroy—for providing financing for rural housing under the "Housing for Sustainable Rural Development" investment program. Ipoteka Bank (Mortgage Bank) is a major mortgage provider and a source of construction financing in Uzbekistan. Both banks have been consulted during the project preparation period (see Annex 5) on the most feasible type of financing mechanism or mechanisms to support low-carbon rural housing. Both banks will participate in the green mortgage scheme under the project, and both have provided co-financing letters (see Annex 15).

Type of Stakeholder	Name of Stakeholder	Relevance to Project, Role in Preparation, and Role in Implementation
	Qishloq Qurilish Loyiha (QQL)	Qishloq Qurilish Loyiha (Rural Construction Project) is a design organization that is responsible for designs and prototypes of rural housing financed under the RHP. QQL will serve as the project partner for the design and construction of the pilot Nearly-Zero Energy house constructed under the project and will provide investment co-financing to the project in the form of design revision, site preparation and works, and construction oversight.
	Manufacturers and distributers of construction materials and technologies	Representatives of the construction industry were consulted during project preparation. This group will be consulted during project implementation to determine the current availability of efficient materials and equipment on the market and to identify potential areas for supply chain support activities.
Other Stakeholders in Uzbekistan	Organizations supporting the dissemination of efficient technologies	These organizations, such as Energy Centre Uzbekistan, the Association of Producers of Renewable Energy (APRE), and the Chamber of Commerce and Industry of Uzbekistan have all been consulted regarding their experiences in technologies for rural housing, rural infrastructure, and the construction sector. The project will maintain a two-way flow of information with these organizations, particularly regarding activities under Component 2 to support the development of the market for efficient and renewable materials and technologies for the construction sector. APRE is providing in-kind co-financing for the project, and it has developed an analytical review of the development of renewable technologies in Uzbekistan, which it has shared with the project preparation team. The Chamber of Commerce and Industry is providing co-financing to the project as well.
	Research organizations	The Institute of Energy and Automation, which operates under the Academy of Sciences, has been consulted on technologies and current R&D efforts. It is providing in-kind co-financing for project activities, and it will be consulted regarding energy performance measurement and pilot buildings. The Center for Economic Research (CER) provided key inputs to project design and documentation in the form of analysis of consumer willingness to invest in energy efficiency and tariff development scenarios and their corresponding impact on ROI for investments in energy efficient and renewable technologies. The project will continue to consult with them on their research work during implementation. The Institute of Forecasting and Macroeconomic Research has also been consulted on the development of the project, as has the International Solar Institute. These organizations may be proposed for membership in the Project Board in order to leverage their technical expertise.
	Academic Institutions	Tashkent State Technical University educates architects and engineers as part of its programs of study. It was consulted by the project preparation team, and it will provide in-kind co-financing to the project.

Type of Stakeholder	Name of Stakeholder	Relevance to Project, Role in Preparation, and Role in Implementation
	NGOs	The Khorezm Rural Advisory Support Service (KRASS) provided key inputs to the preparation of the project design and documentation in the form of a rural observation on household energy use patterns for several different regions of Uzbekistan. The project will continue to consult with them on their research work during implementation. Organizations such as the Ecological Movement of Uzbekistan and the Uzbek Club on Alternative Energy will be consulted regarding their experiences with awareness-raising activities at the sub-national level that would be relevant to Component 4 of the project.
	Rural homebuyers and homeowners	Individual homebuyers are important stakeholders in the project, because they are both beneficiaries and investors. RHP homebuyers participating in the green mortgage will contribute equity in the former of cash down payments on the homes that are financed--more than USD 22 million for the 1,588 EE and Low-Carbon houses. These homebuyers will ultimately determine the rate of placement of green mortgages. Existing homeowners would play a similar role in the proposed solar PV financing mechanism.
Multilateral Organizations	Asian Development Bank	ADB will be consulted regularly regarding lessons learned to date under the rural housing loan and its ongoing activities in Uzbekistan.
	Islamic Development Bank	The Islamic Development Bank has provided USD 100 million to support the construction of rural housing and infrastructure. The bank is also interested in supporting efficient street lighting for rural settlements. The project will maintain close communication with the bank and will share all findings related to the green mortgage mechanism, sustainable approaches to town planning, and a possible financial mechanism to finance solar PV units for rural houses.
	UNECE	The project team will consult with UNECE regarding its support for the Country Profile on Housing and Land Management for Uzbekistan, the Inter-Agency Working Group on the development of the profile, and on information that will be collected for the profile that may be of use to the proposed project.
	World Bank	The project team will consult with the Country Office regarding the findings from its on-going projects in climate change mitigation through sustainable agriculture and in metering and energy data management.
	WHO/GEF-SCCF	WHO recently concluded a 5-year, $550,000 project, "Climate Change Adaptation to Protect Human Health," in partnership with Uzhydromet. The project was designed to pilot adaptation measures in Tashkent and Syrdarya provinces to increase the adaptation capacity of the health-care system to address climate-induced diseases. Uzhydromet will be consulted on the following: 1) training materials for healthcare facilities, which may be shared with new settlements participating in sustainable local development planning; 2) disease monitoring and surveillance practices, which may be used to monitor the project's effect on the health of green building occupants as opposed to residents of "control" RHP buildings and existing rural houses; and 3) awareness raising practices with local populations (in order to determine effective delivery approaches).

Annex 5 Documentation of Selected Stakeholder Consultations in 2014-2015

12-16 October 2015: *National and international partners met during stakeholder consultations held during the implementation of the PPG. The mission to Tashkent, Uzbekistan included Ms. Marina Olshanskaya, UNDP-GEF Regional Technical Advisor, Energy, Infrastructure, Technology and Transport, Istanbul Regional Center for Europe and CIS, jointly with Ms. Rano Baykhanova, Climate Change Specialist, UNDP CO, and an International Consultant on Project Development.*

Organizations	Names of participants
State Committee for Architecture and Construction	**Khashimov Sh.R,** Deputy Chairman **Kahlkhodjaev M.T.,** Head of UMDPO Dept.
Ministry of Economy	**Evdokimov L.A,** Head of Dept on EE and RE
Center for Hydrometeorological Service under the Cabinet of Ministers of the Republic of Uzbekistan (UzHydroMet)	**Myagkov S.V**., Operational Focal Point on GEF projects **Agaltseva N.A.**, Deputy Head **Khromova O.Yu.**, Head of International Relations Dept.
NGOs	
Institute on Energy and Automation under the Academy of Science of Uzbekistan	**Gaziev B.A.**, junior research officer
Energy Center of Uzbekistan	**Sitdikov R.A,** senior expert
Rerpublican Association of Enterprises of altertnative types of fuel and energy	**Alimbaev A.A.**,Chairman **Usmanov Kh.M.**, Head of Dept.
Ecological Movement of Uzbekistan (Parliament of Uzb.)	**Khudayberdiev Avaz**, Head of International Relations Dept.
Banking sector	
Qishloq Qurilish Bank	**Uralova Mukhabbat**, Head of Dept on external trade operations
National Bank of Uzbekistan	**Oblomurodov Z.N.**, Head of Dept. on mortgage and consumer crediting
Ipoteka Bank	**Kurbanov F.K.,** Deputy Head of Dept. on mortgage and consumer crediting
Additional State Organizations	
Ministry of Finance	**Latifdjanov A.R.,** Head of Investments management Dept. **Sodikov Sh.I.,** Deputy Head of Investments management Dept.

Ministry of Foreign Affairs	
State Committee for Architecture and Construction	**Kahlkhodjaev M.T.,** Head of UMDPO Department
Chamber of Commerce and Industry of Uzbekistan	**Rijichenko Oleg.,** Head of Foreign economic relations Dept.
State Committee of the Republic of Uzbekistan for land resources, geodesy, cartography and state land cadastre/registry	**Karabaev Yu.T.**, Head of Dept.
Center for Hydrometeorological Service under the Cabinet of Ministers of the Republic of Uzbekistan (UzHydroMet)	**Agaltseva N.A**., Deputy Head
State Committee of the Republic of Uzbekistan for Nature Protection	**Rakhimov Z.I,** Director of Eco-Energy Center
Institute on forecastiong and macroeconomic research	**Adizov A.J,** senior research officer
Center for Economic Research (CER)	**Mukhamekhanova K.,** analyst
International Organizations	
Asian Development Bank	**Ms. Fleme Teves**, Project Analyst, ADB **Ms. Farida Djumabaeva**, Associate Project Analyst, ADB Uzbekistan
Islamic Development Bank	Mr. Nurmukhammad Akmalov, Field Representative Assistant,
French Embassy in Tashkent	Ms. Myriam Galland
European Union Delegation to Uzbekistan	Mr. Elbek Khodjaev
SDC	Mr. Sohib Akramov, Program Manager

23-27 February 2015: *National Partners and International Organizations met by Mr. Daniel Buckley, Climate Change Team of Environment & Energy Group, Bureau for Development Policy, UNDP and Ms. Rano Baykhanova, Climate Change Specialist, UNDP CO related to GCF readiness program to access climate financing during the scoping mission to Uzbekistan.*

1	Mr. Viktor Chub	General Director, Center of Hydrometeorological Services under the Cabinet of Ministers of the Republic of Uzbekistan
2	Mr. Shukhrat Vafaev	Deputy Executive Director, Fund for Reconstruction and Development of Uzbekistan
3	Ms. Anastasia Saidmakhmudova	Head of Unit on International Cooperation, Environment Movement of Uzbekistan

4	Mr. Azamat Azizov	Head of Department on Applied Environment Sciences, National University of Uzbekistan
5	Prof. Fazliddin Khikmatov	Geographic Department, National University of Uzbekistan
6	Mr. Bakhtiyer Khalmadjonov	Associate Professor, National University of Uzbekistan
7	Mr. Askar Sarymsakhodjaev	First Deputy Chairman, Association "Enterprises of Alternative Fuels and Energy"
8	Mr. Khusnutdin Usmanov	Deputy Chairman, Association "Enterprises of Alternative Fuels and Energy"
9	Mr. Serik Tastanbekov	Member/Consultant, National Association of the Non-Governmental and Non-Commercial Organizations
10	Mr. Alisher Sheraliev	Chief Accountant, Charity Fund for Aral Gene Pool Protection
11	Mr. Ergash Dilyafruz	Chief Specialist, Republican and Sub-National Environmental Protection Funds,
12	Mr. Shukhrat Talipov	Chairperson from Uzbekistan in IFAS Secretariat, Executive Committee of the International Fund for Saving the Aral Sea
13	Mr. Mumin Turaev	Third Secretary, Ministry of Foreign Affairs
14	Ms. Dilorom Ubaydullaeva	Member of Legislative Chamber of Oliy Majlis (Parliament)
15	Mr. Kabul Nasyrov	Member of Legislative Chamber of Oliy Majlis (Parliament)
16	Ms. Tatiana Lee	Head of Department on Information System "Environment and Health", Ministry of Health
17	Ms. Magprat Muminova	Head of Environment Protection Service, JSC "UzbekEnergo"
18	Ms. Rakhima Artykova	Head of Unit on Trainings, Uzbek Agency "Uzcommunkhizmat"
19	Mr. Khasan Mamarasulov	Deputy Head of Department for Coordination and Development of Market Infrastructure in Rural Regions, Ministry of Agriculture and Water Resources
20	Mr. Ziyod Mirakhmedov	Director of Department on Coordination, Monitoring and Control of Targeted Utilization of Humanitarian Aid and Technical Assistance, Ministry of Finance
21	Mr. Aziz Khakberdiev	Leading Specialist of Unit on Business Development, Chamber of Commerce and Industry of Uzbekistan (including private business)
22	Mr. Nodirjon Yunusov	Head of Unit on International Relations and Programs, State Committee for Nature Protection
23	Ms. Raisa Taryannikova	Head of Unit, Uzhydromet
24	Mr. Sherzod Nasrullaev	Head of Department, National Bank of Uzbekistan
25	Ms. Afize Ametova	Head of Unit, Qishloq Kurilish Bank
26	Mr. Farkhod Kurbanov	Deputy Head of Department, Ipoteka Bank

27	Mr. Tosten Gohler	Deputy Head of Mission, German Embassy
28	Mr. Torsten Brezina	Country Director, Head of GIZ Programme in Uzbekistan

17-22 May 2014: *National Partners and International Organizations met by Dr. Axel Michaelowa, International Consultant on Development of project proposal on NAMA for Sustainable Rural Housing in Uzbekistan during his mission to Uzbekistan held on 17 – 22 May 2014*

1	Mr. Akbar Ishankulov	First Deputy Chairman, Qishloq Kurilish Bank
2	Mr. Abdumadjit Abdurahmanov	Head of Unit, Qishloq Kurilish Service
3	Mr. Muzraf Shakarimov	Adviser to Board Chairman, Ipoteka Bank
4	Mr. Shukhrat Ismailov	Head of Main Department of the Ministry of Economy
5	Mr. Gafur Djamalov	Head of Housing Department, Ministry of Economy
6	Mr. Shalhrukh Irnazarov	Head of KfW Office in Uzbekistan

16-20 March 2014: *National Partners met during support mission to Tashkent Uzbekistan by Ms. Marina Olshanskaya, UNDP-GEF Regional Technical Advisor, Energy, Infrastructure, Technology and Transport, Bratislava Regional Center for Europe and CIS jointly with Ms. Rano Baykhanova, Climate Change Specialist, UNDP CO.*

1	Mr. Shukhratkhodja Khashimov	Deputy Chair of State Committee for Architecture and Construction (Gosarchitectstroy)
2	Mr. Mukhammadshakir Khalhodjaev	Head of Department for Monitoring of Activities of Design Organizations of State Committee for Architecture and Construction (Gosarchitectstroy)
3	Mr. Olimjon Akhmedov	Deputy General Director of Uzbek Agency "Uzcommunkhizmat"
4	Mr. Bakhtiyor Rakhmonov	Deputy Mayor of Tashkent City
5	Mr. Ravshan Gylaymov	Executive Director of Fund for Reconstruction and Development of Uzbekistan
6	Mr. Shukhrat Ismailov	Head of Main Department of the Ministry of Economy

Annex 6. Terms of Reference for Project Board and National Project Coordinator

PROJECT BOARD

Composition and organization: The Project Board contains three roles, including (1) **an executive**: individual representing the project ownership to chair the group; (2) **senior supplier**: individual or group representing the interests of the parties concerned which provide funding and/or technical expertise to the project; and (3) **senior beneficiary**: individual or group of individuals representing the interests of those who will ultimately benefit from the project.

I. Specific responsibilities

1. Initiating a project:
   - Agree on PM's responsibilities, as well as the responsibilities of the other members of the Project Management team;

- Delegate any Project Assurance function as appropriate;
- Review and appraise detailed Project Plan and AWP, including Atlas reports covering activity definition, quality criteria, issue log, updated risk log and the monitoring and communication plan.

2. Running a project:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
- Address project issues as raised by the Project Manager;
- Provide guidance and agree on possible countermeasures/management actions to address specific risks;
- Agree on Project Manager's tolerances in the Annual Work Plan and quarterly plans when required;
- Review Combined Delivery Reports (CDR) prior to certification by the Implementing Partner;
- Appraise the Project Annual Review Report, make recommendations for the next AWP, and inform the Outcome Board about the results of the review.
- Review and approve end project report, make recommendations for follow-on actions;
- Provide ad-hoc direction and advice for exception situations when project manager's tolerances are exceeded;
- Assess and decide on project changes through revisions;

3. Closing a project:

- Assure that all Project deliverables have been produced satisfactorily;
- Review and approve the Final Project Review Report, including Lessons-learned;
- Make recommendations for follow-on actions to be submitted to the Outcome Board;
- Commission project evaluation (only when required by partnership agreement)
- Notify operational completion of the project to the Outcome Board.

II. Executive

The Executive is ultimately responsible for the project, supported by the Senior Beneficiary and Senior Supplier. The Executive's role is to ensure that the project is focused throughout its life cycle on achieving its objectives and delivering outputs that will contribute to higher-level outcomes. The Executive has to ensure that the project gives value for money, ensuring a cost-conscious approach to the project, balancing the demands of beneficiary and supplier. Specific Responsibilities (as part of the above responsibilities for the Project Board) include:

- Ensure that there is a coherent project organization structure and logical set of plans
- Set tolerances in the AWP and other plans as required for the Project Manager
- Monitor and control the progress of the project at a strategic level
- Ensure that risks are being tracked and mitigated as effectively as possible
- Brief Outcome Board and relevant stakeholders about project progress
- Organize and chair Project Board meetings

III. Senior Beneficiary

The Senior Beneficiary is responsible for validating the needs and for monitoring that the solution will meet those needs within the constraints of the project. This role represents the interests of all those who will benefit from the project, or those for whom the deliverables resulting from activities will achieve specific output targets. The Senior Beneficiary role monitors progress against targets and quality criteria. Specific Responsibilities (as part of the above responsibilities for the Project Board) include:

- Ensure the expected output(s) and related activities of the project are well defined
- Make sure that progress towards the outputs required by the beneficiaries remains consistent from the beneficiary perspective
- Promote and maintain focus on the expected project output(s)
- Prioritize and contribute beneficiaries' opinions on Project Board decisions on whether to implement recommendations on proposed changes
- Resolve priority conflicts

The assurance responsibilities of the Senior Beneficiary are to check that:

- Specification of the Beneficiary's needs is accurate, complete and unambiguous

- Implementation of activities at all stages is monitored to ensure that they will meet the beneficiary's needs and are progressing towards that target
- Impact of potential changes is evaluated from the beneficiary point of view
- Risks to the beneficiaries are frequently monitored

IV. Senior Supplier

The Senior Supplier represents the interests of the parties, which provide funding and/or technical expertise to the project (designing, developing, facilitating, procuring, implementing). The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project. The Senior Supplier role must have the authority to commit or acquire supplier resources required. Specific Responsibilities (as part of the above responsibilities for the Project Board) include:

- Make sure that progress towards the outputs remains consistent from the supplier perspective
- Promote and maintain focus on the expected project output(s) from the point of view of supplier management
- Ensure that the supplier resources required for the project are made available
- Contribute supplier opinions on Project Board decisions on whether to implement recommendations on proposed changes
- Arbitrate on, and ensure resolution of, any supplier priority or resource conflicts

The supplier assurance role responsibilities are to:

- Advise on the selection of strategy, design and methods to carry out project activities
- Ensure that any standards defined for the project are met and used to good effect
- Monitor potential changes and their impact on the quality of deliverables from a supplier perspective

Monitor any risks in the implementation aspects of the project

Annex 7 Terms of Reference for Key Project Staff

1. Project Manager

I. Position Information	
Position Title:	Project Manager
SC range:	SC-9
Project Title/Department:	Market Transformation for Sustainable Rural Housing in Uzbekistan / Environment and Energy Unit
Duration of the service:	1 year (with possible extension subject to satisfactory performance)
Work status	Full-time
Reports To:	Head of Environment and Energy Unit

II. Background

Under the supervision of UNDP Uzbekistan, Project Manager manages the project implementation

III. Functions / Key Outputs Expected

- Responsible for day-to-day management, administration and decision-making for the project;
- Oversees strategic planning process for the project and ensures its implementation in accordance with the signed project document;
- Responsible for ensuring that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost;
- Manage the realization of project outputs through activities;
- Ensures that project contributes to the promotion of gender equality by reaching, involving and benefiting both women and men in its activities (gender mainstreaming);
- Provide direction and guidance to project team(s)/ responsible party (ies);
- Identifies partnership strategies with regard to providers of specialized expertise and possible co-financiers, and leads resource mobilization for project components;
- Identify and obtain any support and advice required for the management, planning and control of the project;
- Liaise with any suppliers;
- Mainstream gender issues in the project activities;
- May also perform Team Manager and Project Support roles;
- Perform other duties related to the scope of work of the PM as required

Running a project

- Plan the activities of the project and monitor progress against the initial quality criteria;
- Mobilize goods and services to initiative activities, including drafting TORs and work specifications;
- Manage requests for the provision of financial resources by UNDP, using advance of funds, direct payments, or reimbursement using the IPSAS;
- Manage and monitor the project risks as initially identified in the Project Document, submit new risks to the Project Board for consideration and decision on possible actions if required; update the status of these risks by maintaining the Project Risks Log;
- Be responsible for managing issues and requests for change by maintaining an Issues Log;
- Prepare the Quarterly Project Report (progress against planned activities, update on Risks and Issues, expenditures in UNDP format) and Quarterly Operational Report (Adaptation Fund format) and submit the reports to the Project Assurance team;
- Prepare the Annual Review Report (UNDP format) and Project Implementation Report (GEF format) and submit reports to the Project Assurance team and GEF; based on the ARR, prepare the Annual Work Plan (AWP) and Annual Plan of Activities and Procurement Plan for the project years;
- Monitors the implementation of project components, analyses problems that hamper their implementation and takes appropriate measures to ensure timely delivery of required inputs and achievement of project-wide results;
- Monitor financial resources and accounting to ensure accuracy and reliability of financial reports, including proper utilization of funds and delivery, budget revisions, availability of funds, reconciliation of accounts, establishment of

internal control mechanisms. Acts as a focal point to liaise with auditors and ensures follow-up actions. Ensures the accuracy and reliability of financial information and reporting;
- Sign annual CDRs with UNDP and the Implementing Partner national agency;
- Monitors and facilitates advocacy and mass media outreach activities, writing of success stories, newspapers coverage, PR campaigns;
- Organize workshops, seminars and round tables to introduce project outputs to all stakeholders involved. Render support to related UNDP thematic activities such as publications, sharing of knowledge and group discussions;
- Liaises with other UNDP and UNDP-GEF funded projects to implement possible synergies and reports to UNDP Programme Officer and NPC on conducted activities;
- Undertake resource mobilization activities to be built on the project achievement that contribute to project scaling-up and replication

Closing a Project

- In cooperation with the UNDP CO and national project experts, develop a suitable project exit strategy during the last year of the project, and present it for approval to the UNDP Regional Center in Istanbul;
- Ensure proper operational, financial and programmatic closure of the project;
- Prepare Final Project Review Reports to be submitted to the Project Board;
- Identify follow-on actions and submit them for consideration to the Project Board;
- Manage the transfer of project deliverables, documents, files, equipment and materials to national beneficiaries;
- Prepare final CDR for signature by UNDP and the Implementing Partner.

IV. Competencies	
Corporate Competencies:	• Demonstrates commitment to UNDP's mission, vision and values; • Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability; • Demonstrating/safeguarding ethics and integrity; • Demonstrate corporate knowledge and sound judgment; • Self-development, initiative-taking**;** • Acting as a team leader and facilitating team work**;** • Facilitating and encouraging open communication in the team, communicating effectively**;** • Creating synergies through self-control; • Managing conflict; • Learning and sharing knowledge and encourage the learning of others; • Informed and transparent decision making
Functional Competencies:	*Communications and Networking* • Has excellent oral communication skills and conflict resolution competency to manage inter-group dynamics and mediate conflicting interests of varied actors; • Has excellent written communication skills, with analytic capacity and ability to synthesize project outputs and relevant findings for the preparation of quality project reports; • Maturity and confidence in dealing with senior and high ranking members of national and international institutions, government and non-government. *Knowledge Management and Learning* • Promotes a knowledge sharing and learning culture in the team through leadership and personal example; • Actively mentoring project staff under her/his supervision; • Leadership and Self-Management; • Focuses on result for the client and responds positively to feedback; • Consistently approaches work with energy and a positive, constructive attitude; • Remains calm, in control and good humored even under pressure;

	• Competent in leading team and creating team spirit, stimulating team members to produce quality outputs in a timely and transparent fashion. *Development and Operational Effectiveness* • Ability to organize and complete multiple tasks by establishing priorities; • Ability to handle a large volume of work possibly under time constraints. *Job Knowledge/Technical Expertise* • Understands the main processes and methods of work regarding to the position • Strives to keep job knowledge up-to-date through self-directed study and other means of learning; • Demonstrates good knowledge of information technology and applies it in work assignments. *Leadership and Self-Management* • Builds strong relationships with clients, focuses on impact and result for the client and responds positively to feedback; • Consistently approaches work with energy and a positive, constructive attitude; • Demonstrates good oral and written communication skills.
V. Qualifications Requirements	
Education:	Bachelor/Master's degree in the following areas: civil engineering, construction engineering, or energy engineering, business administration, finance, or economics.
Experience:	At least 3-4 of years of relevant experience. Practical experience in project management. Working experience in international organizations is an advantage.
Language Requirements:	Excellent command of spoken and written English, Uzbek and Russian are essential
Others:	Sound experience in the project management associated with climate change adaptation, environment protection and corresponding sustainable development and corresponding UN conventions and treaties; Knowledge of and experience in gender mainstreaming is an asset; Proven experience in working and collaborating with governments; Initiative and strong leadership skills; Result and client-orientations; Strong analytical, communication, writing, presentation and communication skills; Excellent interpersonal and cross cultural communication skills, ability to work in a team and to work under pressure and with tight deadlines, ethics and honesty; Ability to use information and communication technology as a tool and resource; Willingness to travel as appropriate

2. Chief Technical Advisor

I. Position Information	
Position Title:	Chief Technical Advisor (CTA)
Type:	Reimbursable Loan Agreement (RLA)
Project Title/Department:	Market Transformation for Sustainable Rural Housing in Uzbekistan / Environment and Energy Unit
Duration of the service:	20 working days per calendar year, from August 2016 to December 2021 (total 120 w/d)

Duty station: Reports to:	Home-based with at least one mission each year to Tashkent and project sites in regions Project Manager

II. Background information

The Chief Technical Advisor (CTA) will advise the project team directly in effective and timely project implementation. The CTA will provide overall project advisory services and technical assistance to PM, Project Task Managers and other project consultants. In essence, the responsibility of the CTA is to ensure that the overall thematic/technical direction of the project is maintained and flexibility adapted to meet the practical challenges faced during the implementation of the project.

III. Functions / Key Outputs Expected

Thematic functions:

Component 1: Green mortgage market mechanism to scale-up demand for low-carbon housing

Outcome 1.1*:* Green mortgage scheme is in place and provides incentives to homebuyers to invest in houses that feature low-carbon design and technologies

- Oversee interactions between the project and financial institutions and regulators to determine acceptable terms and conditions for the green mortgage scheme.
- Monitor and guide launch the scheme with a participating banks and market to existing RHP customers
- Monitor uptake and loan performance
- Provide guidance on modifying terms and conditions as necessary
- Provide support in documenting and disseminating experiences

Outcome 1.2: Financial institutions have capacity to design and operate dedicated financial products for low-carbon housing

- Provide support in conducting a training needs assessment for the residential lending sector
- Coordinate the work with international experts to develop a training curriculum
- Provide review and guidance with regard to the development and provision of trainings to financial institutions and government regulators, as well as establishing a system for "on-call" expert assistance to bank branches issuing green mortgages
- Provide support in gathering feedback after first loan season and update and modify training and on-call assistance as necessary

Component 2: Construction and domestic supply chain for low-carbon housing and settlements

Outcome 2.1: Energy-efficient and low-carbon houses are demonstrated, and their designs are available for replication

- Oversee support for finalization of EE house, Low-Carbon house, and Nearly-Zero Energy house designs and assessments of estimated cost and energy performance
- Monitor and guide the finalization of the participation of the pilot municipalities in the construction of EE and Low-Carbon houses and ensure that both the participating houses and a control group of baseline houses are equipped to be monitored for fuel supply, energy consumption, and indoor air temperature and humidity.
- Coordinate the work on monitoring and auditing actual, year-round energy performance, construction costs, and user energy costs (with an effort to cover two heating seasons by the end of the project for the first houses receiving green mortgages) in relation to a baseline RHP houses in similar conditions.
- Provide guidance on issuance of energy labels for these buildings on the basis of data collected.
- Provide support as needed in assessing other benefits (social, economic, health, environmental) of the EE and low-carbon houses and measure satisfaction of the occupants relative to the control houses.
- Provide input and recommendations in documenting activities on an on-going basis and preparation of a lessons-learned report with recommendations on how to expand good design, financing, and labelling practices to a broader share of RHP-financed housing and to rural housing more generally.

Outcome 2.2: Rural developers, homebuilders, and homeowners have improved access to EE and RE technologies

- Provide guidance on development and conducting a technology needs assessment (TNA) for rural houses and community infrastructure
- Provide recommendations on identifying a short list of high-priority EE and RE technologies from the TNA

- Provide guidance on conducting a market study for the above technologies and producing a report including an assessment of the state of the market, an actor analysis and mapping of actors, a supply chain analysis (including the analysis of potential sister supply chains), and an assessment of market barriers for these high-priority technologies
- Oversee support for development and provision of the detailed report with specific recommendations to the Government on technology promotion in the context of its Roadmap for Increasing Energy Efficiency for 2015-2019

Component 3: Policy and regulatory reform to enable the scale-up of low-carbon housing and settlements

Outcome 3.1: Appropriate policy and regulations, such as minimum-energy performance standards (MEPS), are in place to enable scaled-up construction of low-carbon housing and settlements.

- Provide guidance on development of a road map for strengthening the MEPS for new rural residential buildings
- Provide guidance on development of a roadmap for the adoption of standards and/or certification of EE, Low-Carbon, and Nearly Zero-Energy residential buildings or another relevant designation for low-emissions buildings.
- Provide recommendations on compilation of technical recommendations for the strengthened MEPS, agreeing on targets (taking various climatic zones, availability of construction materials and cost-effectiveness considerations into account), and undertaking any additional work necessary to develop the proposed MEPS
- Assist in undertaking any revisions or modifications necessary based on feedback and submitting final proposed MEPS and other designations to Gosarchitectstroy
- Provide review and guidance on development and submission of recommendations on a "nearly zero-energy building" designation.

Outcome 3.2: Gosarchitectstroy and its territorial divisions have the capacity to appraise standard EE/low-carbon home design under the green mortgage scheme and ensure compliance with new building codes and the minimum energy performance standards in them

- Provide review and guidance with regard to review functional responsibilities of UMDPO and its regional branches in building code enforcement
- Oversee support for conducting a training needs assessment and stocktaking of lessons learned from previous training provided in the public buildings sector
- Provide specific recommendations to Gosarchitectstroy on the organization of building codes enforcement
- Act as an expert/lecturer and provide management training on new roles and responsibilities
- Oversee support for development and launch of a training-of-trainers programme for in-service training on MEPS and code compliance and building certification/labelling for inspectors and architects from design agencies.
- Provide review and guidance on (i) development, drafting, publishing, and dissemination of official guidance manuals on energy-efficient design solutions, calculation methods, including spreadsheet-based software for calculating building energy performance, and interpretation of the code, as well as (ii) delivery of seminars for architects and engineers on EE design, construction, and the content of revised codes.
- Oversee interactions between the project and Gosarchitectstroy in order to ensure enhancement of linkages with other Gosarchitectstroy departments through ongoing communication and regular meetings

Outcome 3.3: Land-use plans and zoning regulations incorporate efficient resource use and climate considerations.

- Oversee support for conducting a detailed regulatory analysis of master plans and APOTs in participating rural areas to identify specific barriers to the use of efficient siting for rural communities.
- Provide guidance on selecting a pilot community from among the housing developments to be constructed under the RHP and propose and implement innovative approaches to settlement planning in the preparation of the APOT.
- Provide review and guidance with regard to development of specific recommendations on siting to maximise efficient resource use in rural areas and on any legal or regulatory changes necessary to enable these gains.
- Oversee support for provision of training and capacity strengthening for at least five land-use planning officials in the central office of the State Committee on Land Resources, Geodesy, Cartography and National Cadastre and at least one staff member in each of its 14 regional offices on rural land-use practice that is sensitive to climate change considerations and encourages minimizing GHG emissions.

Component 4: Marketing and promotion of low-carbon rural housing and settlements

Outcome 4.1: Rural homebuyers are aware of the benefits and advantages of low-carbon housing.

- Provide review and guidance on conducting a capacity needs assessment, including a baseline survey of awareness among rural homebuyers and other rural residential energy consumers.
- Provide support on development of communications and partnership strategy.

- Provide recommendations in development and dissemination of outreach publications and other media products (e.g. radio spots).
- Oversee support for creation of a rural resource center to showcase EE and renewable technologies, working closely with project staff and consultants to use the center to support training and outreach
- Monitor implementation of project communications strategy, and provision of training on outreach related to the EE and Low-Carbon houses to banks and government agencies.
- Oversee assessment of the survey conducted to assess changes in knowledge and awareness-raising.
- Act as an expert/lecturer to disseminate information regarding project's activities and goals at various forums, such as seminars, training sessions organized for various target audiences: experts in architecture and construction, journalists, and international community;
- Review and edit materials drafted for publishing in local and regional mass-media;
- Serve as a liaison with international media outlets and professional organizations specializing in the issues of architecture and construction, as well as energy-efficient technologies and climate change; based on information provided by project personnel, draft at least 1 article (per year, per outlet) to be published in these outlets;
- Provide recommendations in development of project's imagery, as well as various informational products aimed at raising its visibility, such as brochures, news bulletins, web-pages;
- Provide support in development of video material on the project's activities, as well as public service announcements for TV and radio;
- Provide recommendations in formulating the findings and achievements of the project to be presented to national organizations for future replication and scaling-up;
- Oversee the project's work on planning, monitoring, evaluation, and reporting to UNDP and GEF, including the Project Results Framework, the Results and Resources Framework, Annual Work Plans, Project Implementation Reviews, and the Terminal Evaluation.

Outcome 4.2: National and sub-national stakeholders are aware of and able to incorporate climate considerations and energy management into decision-making.

- Provide recommendations on selection of pilot districts where RHP is active for participation in SLD training.
- Oversee support in consultation with stakeholders and beneficiaries to determine priorities for training
- Provide review and guidance on selection of software and curriculum for settlement-level energy management for use in training and monitoring.
- Assist in delivery of training in 12 regions (with the exact number of settlements in each region to be determined in agreement with regional governments).
- Review and edit the strategy for replicating to other settlements in participating districts and other districts.
- Provide recommendations to the government for introducing energy management practices for settlements through national policies/legislation/regulations.
- Oversee support in documenting the training process and uptake of SLD and energy management concepts after training and 2 years ex post.

Operational functions:

1. Contribution to Inception Phase, Periodic Review of Project Implementation and Advice on Improvement

- Contribute to the project inception phase, develop inception report and attend inception workshop;
- Weekly or more frequent email and/or Skype/phone exchanges with project management and team leaders in order to monitor progress, assist in planning, and identify key technical problems (if any) and means for solving them (Skype/phone exchanges to be conducted at least monthly unless project staff state the need for longer intervals between calls);
- Undertake field trips to the project sites during each mission to Uzbekistan, if and when required, in order to make systematic review of the progress and results of each Component of the project based on field evidence;
- Participate, when feasible, in Project Board Meetings and other relevant project meetings;
- Assist in capturing the key lessons and developing a replication plan for other regions and communities in Uzbekistan. As part of the replication strategy, assist in developing replication materials for wider dissemination and application of project results and lessons learned;
- In cooperation with the project team and UNDP CO, develop a suitable project exit strategy, and present it for approval to the Project Board Meeting.

2. Assistance in Planning, Staff Recruitment, Monitoring and Evaluation

- Provide support and advice for preparation or revision of key planning and evaluation documents such as the project Annual Plan of Actions(APAs), Annual Work Plan (AWPs), Project Implementation Reviews (PIRs), progress reports, monitoring and review reports etc.;
- Assist in the development of relevant Terms of References and mobilization of qualified national experts and organizations needed to provide specific consultancy services;
- Support Project Manager in the preparation and implementation of the Mid-Term and Terminal Evaluations (TORs, selection of appropriate candidates, accompaniment of field missions if and when required, discussion with evaluators, etc.).

Outputs

1. Written comments and recommendations with regard to the four thematic functions listed above. Written work will be supplemented by other requested consultation by phone, Skype, and in person. Work conducted for this output will be summarized in a biannual written report, prepared in conjunction with Output 2 below.

2. Written comments and recommendations on project planning and evaluation documents and reports. These documents are expected to include, but not be limited to:

- Inception report
- Terms of Reference for international/national consultants/organizations to be recruited during 2016-2021
- Annual Plan of Actions for the period of 2016-2021
- Annual Work Plan for the period of 2016-2021
- PIR covering period of 2016-2021
- Lessons Learned / Exit Strategy report
- Mid-Term and Terminal Evaluations.

Written work will be supplemented by other requested consultation by phone, Skype, and in person. Work conducted for this output will be summarized in a biannual written report, prepared in conjunction with Output 1 above.

3. Reports on missions and/or participation in Project Board Meetings or other meetings. The CTA shall compose annual (or more frequent) written reports summarizing his or her participation in any missions or meetings undertaken during this assignment. At least one mission to Tashkent per year for a total of 6 working days each is envisaged.

IV. Deliverables and timeframe

The following deliverables and indicative schedule are expected from the consultancy contract. The final schedule will be agreed upon in the beginning of consultancy assignment.

#	Deliverables	Timeframe
1	First biannual report, covering all the functions and outputs listed in Section III above and executed during the period July – December 2016	January 15, 2017
2	Second biannual report, covering all the functions and outputs listed in Section III above and executed during the period January – June 2017	July 15, 2017
3	Third biannual report, covering all the functions and outputs listed in Section III above and executed during the period July – December 2017	January 15, 2018
4	Fourth biannual report, covering all the functions and outputs listed in Section III above and executed during the period January – June 2018	July 15, 2018
5	Fifth biannual report, covering all the functions and outputs listed in Section III above and executed during the period July – December 2018	January 15, 2019
6	Sixth biannual report, covering all the functions and outputs listed in Section III above and executed during the period January – June 2019	July 15, 2019
7	Seventh biannual report, covering all the functions and outputs listed in Section III above and executed during the period July – December 2019	January 15, 2020
8	Eights biannual report, covering all the functions and outputs listed in Section III above and executed during the period January – June 2020	July 15, 2020
9	Ninth biannual report, covering all the functions and outputs listed in Section III above and executed during the period July – December 2020	January 15, 2021

10	Tenth biannual report, covering all the functions and outputs listed in Section III above and executed during the period January – June 2021	July 15, 2021
12	Eleventh biannual report, covering all the functions and outputs listed in Section III above and executed during the period July – December 2021 and through the end of the project.	December 31, 2021
13	Report on participation in missions and meetings in Uzbekistan a. 1st report (2017) b. 2nd report (2018) c. 3rd report (2019) d. 4th report (2020) e. 5th report (2021)	Within two weeks of completion of mission

IV. Payment Conditions

This is a lump sum contract that should include costs of consultancy and international travel costs (in-country air ticket costs will be covered by the project), accommodation and meal (DSA or per diems in Tashkent and provinces) and visas costs required to produce the above deliverables.

Payment will be released in 6 installments upon timely submission of respective deliverables and their acceptance by the Supervisor and UNDP CO.

V. Recruitment Qualifications

Education:	Advanced degree (master's level, equivalent or higher) in the field of energy, environment, engineering or construction.
Experience:	At least 10 years of practical experience in: • development of project proposals meeting requirements of climate change focus (mitigation) area to the Global Environment Facility (GEF), and in particular focused on promoting energy efficiency in buildings; • overall project advisory services to energy efficiency in buildings projects in Central Asia in effective and timely project implementation to ensure that the overall technical direction of the project is maintained and flexibility adapted to meet the practical challenges faced during the implementation of the project; • provision of technical guidance on implementation and completion of key project components/activities, inputs on key technical decisions at strategic moments in the project implementation; • development and delivery of (i) roadmaps on green mortgage scheme, EE building codes/MEPS, EE building designs, energy audit and management, training programs (ii) project inception and project implementation reports for GEF; • preparation of the project to Independent Mid-Term and Terminal Evaluations, analysis of results and development of corrective actions, management response as per results of evaluations.
Language Requirements:	Proficiency in English, excellent analytical and presentation skills; working knowledge of written and spoken Russian language.
Others:	Good understanding of local policies and practices in construction sector. Outstanding time-management, organizational and interpersonal skills.

3. National Technical Advisor

II. Position Information	
Position Title:	National Technical Advisor
SC range:	SC-8
Project Title/Department:	Market Transformation for Sustainable Rural Housing in Uzbekistan / Environment and Energy Unit

Duration of the service: Work status Reports To:	1 year (with possible extension subject to satisfactory performance) Full-time Project Manager

II. Background

Under direct supervision of the Project Manager, the National Technical Advisor (NTA) will work closely with project Team Leaders and inter/national consultants and will be fully responsible for coordination of all relevant thematic activities through providing sound technical expertise and oversight

III. Functions / Key Outputs Expected

Thematic functions:

- Carry out general thematic supervision of the project Team Leaders and experts, thus achieving synergy effects and close collaboration between the project components;
- Responsible for coordination of proper and timely implementation of all technical, thematic activities to be carried out within all 4 project components, including rendering support/advice and overseeing work of 4 Team Leaders, international/national consultants. This includes preparation of terms of references (TORs) of national and international consultants, coordination and control on preparation of work plans and reports, organization of field works, assistance in organization of experts' team work, integration of their results in a single position, support in (i) preparation of project reports, (ii) organization of project activities, (e.g. seminars, trainings, master-classes etc.), and project representation on local level in the absence of PM;
- Coordinate activities of the project experts in achieving synergy effects and avoiding duplication;
- Participate in regular meetings with PM and discussion of project results, achievements and/or challenges;
- Conduct regular meetings (at least once a fortnight) with short-term national consultants to secure effective joint planning of activity and monitoring implementation of thematic tasks described in respective thematic work plans;
- Conduct periodical meetings with representatives of the project partner organizations (as necessary, but at least once a quarter);
- Coordinate of all project activities related to establishment and maintaining close and trustful cooperation with public and private enterprises, involved in rural housing sector;
- In cooperation with PM, provide assistance in organizing meetings with representatives of donor organizations and UNDP projects in terms of possible joint activities and resource mobilization;
- Provide support PM and UNDP Energy and Environment Unit in collection and analyzing data required for mobilization of additional resources and elaboration of project proposals in the field of promoting energy efficiency, application of renewable energy and low/zero energy, passive house technologies in rural housing sector;
- Prepare necessary thematic presentations and reports for the Project Board meetings, round tables and/or similar events;
- Establish working relationships with colleagues from regional projects on promoting energy efficiency to ensure timely and effective exchange of information, lessons learned and experience related to implementation of project thematic tasks;
- Provide support on planning and implementation of international experts missions to Uzbekistan, ensure strict control over timely implementation and completion of all planned activities;
- Provide technical, thematic support and consultancy to the State Committee on Architecture and Construction, Tashkent Architecture and Construction Institute, Tashkent State Technical University, regional and district municipalities and project national/international consultants in elaboration of training programmes, plans, and coordinate organization of trainings, master-classes for architects, design/construction specialists, regional/district authorities and rural population;
- Provide technical support and consultancy to experts in conducting regular monitoring of mainstreaming results on demonstration sites, documenting obtained results, developing specific recommendations to the Government on technology promotion, organization of information campaigns and strategy of further dissemination of the project results;
- Perform other duties upon request from PM.

Operational Functions:

- Be responsible for the satisfactory achievement and implementation of the project outputs;

• Plan and implement the work in accordance with the overall work-plan using both human and financial resources available in the most effective/efficient way and ensure compliance with UNDP and Gosarchitectstroy procedures; • Provide support to PM in development of annual and quarterly technical plans and reports; • Provide support to PM in preparation of all required project reporting (in both UNDP and GEF formats), including quarterly operational reports (QOR), annual review reports (ARR), project implementation reports (PIR), annual work plans (AWP), annual plans of activities (APA) and procurement plans (PP); • Effectively coordinate data collection and treatment, preparation of reports on field works, mapping, preparation of presentations and so on; • Provide information to PM on technical, thematic results and achievements of experts; • Contribute to elaboration of an 'exit' project strategy to make project outputs sustainable in the long run.	
IV. Competencies	
Corporate Competencies:	• Demonstrates commitment to UNDP's mission, vision and values; • Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability; • Demonstrating/safeguarding ethics and integrity; • Demonstrate corporate knowledge and sound judgment; • Self-development, initiative-taking**;** • Acting as a team leader and facilitating team work**;** • Facilitating and encouraging open communication in the team, communicating effectively**;** • Creating synergies through self-control; • Managing conflict; • Learning and sharing knowledge and encourage the learning of others; • Informed and transparent decision making
Functional Competencies:	• Fundamental knowledge of processes, methods and procedures; • Understanding the main processes and methods of work regarding to the position; • Possessing basic knowledge of organizational policies and procedures relating to the position and applies them consistently in work tasks; • Demonstrating good knowledge of information technology and applies it in work assignments; • Presenting information on best practices in organizational change; • Demonstrating ability to identify problems and proposes solutions.
V. Qualifications Requirements	
Education:	Master's degree in the following areas: civil engineering, construction engineering, or energy engineering
Experience:	• At least 5 years of progressively responsible experience in design and construction management; • Good comprehension of the rural housing construction processes, energy efficiency issues, procedures for introduction and enactment of the building codes (SNiPs); • Working experience in international organizations is an asset.
Language Requirements:	Excellent command of spoken and written Uzbek and Russian are essential. Working level English language is required
Others:	• Strong managerial and communication skills, client-orientation, ability to work in a team; • Knowledge of spreadsheet and database packages, experience in handling of web based management systems; • Practical experience in coordination of the field project activities associated with the rural housing and corresponding sustainable development;

	• Knowledge of and experience in gender mainstreaming is an asset; • Proven experience in working and collaborating with regional / local governments and private business; • Initiative and strong leadership skills; • Result and client-orientations; • Strong analytical, communication, writing, presentation and communication skills; • Excellent interpersonal and cross cultural communication skills, ability to work in a team and to work under pressure and with tight deadlines, ethics and honesty; • Ability to use IT and communication technologies as a tool and resource.

4. Administrative and Financial Assistant

I. Position Information	
Position Title:	Administrative and Financial Assistant
SC range:	SC-6
Project Title:	Market Transformation for Sustainable Rural Housing in Uzbekistan / Environment and Energy Unit
Duration of the service:	1 year (with possible extension subject to satisfactory performance)
Work status	Full-time
Reports To:	Project Manager
II. Background	
Under direct supervision of the Project Manager, Administrative and Financial Assistant is fully responsible for operational and programmatic management of the project according to the project document, UNDP and GEF corporate rules and procedures and for fulfilling but not limiting the following functions:	
• Bear responsibilities for logistics, procurement, finance and recruitment for the project, in accordance with corporate UNDP rules and regulations; • Prepare all financial and administrative documents related to the project implementation; • Develop quarterly and annual budget plans for recruitment of personnel; maintain financial records and monitoring systems to record and reconcile expenditures, balances, payments and other data for day-to-day transaction and reports; • Advise and assist Project staff, experts and consultants on all respects of allowances, salary advances, travel claims and other financial and administrative matters, and calculate and authorize payments due for claims and services; • Prepare detailed cost estimates and participates in budget analysis and projections as required to handle all financial operations of the project office and reconcile all accounts in required time frame; • Maintain, update and transmit inventory records of non-expendable equipment in accordance with UNDP rules; • Perform cash custodian's duties being primarily responsible for project's cash disbursements and maintain project's petty cash book and payrolls related to the regional offices; • Ensure leave monitoring of project staff, check the accuracy and proper completion of monthly leave reports; • Analyze the potential problems concerning administrative-financial issues and take respective measures to provide adequate project's resources in time for implementation of the project activities; • Define the cost-effective measures for optimal use of resources of the project; • Ensure full compliance of administrative and financial processes and financial records with UNDP and GEF related rules, regulations, policies and strategies; • Encourage awareness of and promotion of gender equality among project staff and partners; • Perform other duties related to personnel, administrative and financial issues of project as required	
IV. Competencies	
Corporate Competencies:	• Demonstrates commitment to UNDP's mission, vision and values; • Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability

Functional Competencies:	• Fundamental knowledge of processes, methods and procedures; • Understands the main processes and methods of work regarding to the position; • Possesses basic knowledge of organizational policies and procedures relating to the position and applies them consistently in work tasks; • Demonstrates good knowledge of information technology and applies it in work assignments; • Presentation of information on best practices in organizational change; • Demonstrates ability to identify problems and proposes solutions
Core Competencies:	• Demonstrating/safeguarding ethics and integrity; • Demonstrate corporate knowledge and sound judgment; • Self-development, initiative-taking; • Acting as a team player and facilitating team work; • Facilitating and encouraging open communication in the team, communicating effectively; • Creating synergies through self-control; • Managing conflict; • Learning and sharing knowledge and encourage the learning of others. Promoting learning and knowledge management/sharing is the responsibility of each staff member; • Informed and transparent decision-making.
V. Qualifications Requirements	
Education:	Bachelor degree in any of the following areas: Finance, Economics, Management, Environmental sciences, International Relations, or any related field.
Experience:	At least 2-3-years relevant experience. Working experience in international organizations is an advantage.
Language Requirements:	Excellent command of spoken and written English, Uzbek and Russian are essential
Others:	Strong financial and administrative skills, result and client-orientation, ability to work in a team; Ability to work under pressure and with tight deadlines, ethics and honesty; Ability to use information and communication technology as a tool and resource; Experience in handling web-based management systems; Ability to handle multiple tasks simultaneously and ability to prioritize

5. Task Manager 1: Finance

I. Position Information	
Position Title:	Task Manager
SC range:	SC-8
Project Title/Department:	Market Transformation for Sustainable Rural Housing in Uzbekistan / Environment and Energy Unit
Project Component:	Component 1: Green mortgage market mechanism to scale-up demand for low-carbon housing
Duration of the service:	6 month (with possible extension subject to satisfactory performance)
Work Status:	Full time
Reports To:	Project Manager
II. Background	

The **objective** of the proposed project is to provide Uzbekistan's rural population with improved, affordable and environmentally friendly living conditions. The total project size is estimated at USD 130 million, with a proposed GEF/CCM contribution of USD 6 million. The project design builds directly on previous and on-going experience with sustainable, low-carbon and climate-resilient local development in Uzbekistan. Specifically, the project is designed to lower the energy intensity trajectory of Uzbekistan by building in lower energy demand in new rural homes.

The proposed project consists of four inter-linked **outcomes**. The first and principal outcome is the establishment of the green mortgage scheme to incentivize and eventually scale-up the demand for low-carbon housing. This outcome will be supported and enabled by three complementary outcomes related to strengthening domestic supply chain and capacities for construction of low-carbon housing (Outcome 2), introducing policies and regulations for low-carbon housing and settlements (Outcome 3) and raising public awareness about benefits and advantages of low-carbon housing (Outcome 4).

Under the guidance and supervision of the Project Manager, the Task Manager provides operational and thematic services ensuring high quality, accuracy and consistency of work. The Task Manager works in close collaboration with the Government counterparts, project, operations, and Programme's staff in the CO to exchange information and ensure consistent service delivery, and undertake day-to-day responsibility for operational and thematic support services for the satisfactory achievement of the project component outputs.

III. Functions / Key Outputs Expected

Thematic Functions: Access to affordable 'green mortgage' for rural houses.

- Review and analyze existing information sources and current situation with mortgage scheme under Rural Housing Programme (RHP);
- Meet with the Ministries of Finance, Economy, financial institutions and regulators to determine acceptable terms and conditions for the green mortgage scheme;
- Coordinate and contribute to development and launch the scheme with a participating bank or banks and market to existing RHP customers;
- Modify terms and conditions as necessary;
- Seek approval and enactment of agreed and approved version of the green mortgage scheme by the Cabinet of Ministers of Uzbekistan, relevant ministries, banks and Gosarchitectstroy;
- Closely monitor uptake and loan performance;
- Document and disseminate experiences;
- Conduct a training needs assessment for the residential lending sector;
- Work with international experts to develop a training curriculum;
- Provide training to financial institutions and government regulators;
- Establish a system for "on-call" expert assistance to bank branches issuing green mortgages;
- Gather feedback after first loan season and update and modify training and on-call assistance as necessary;
- Establish cooperation and exchange of information with the corresponding networking, professional groups, experts and similar international projects;
- Contribute to promotion and dissemination of newly launched green mortgage scheme nationally and globally.

Operational Functions:

- Ensure smooth and timely delivery of operational support services in accordance with work plans; analyze potential problems and respond appropriately to ensure timely delivery of agreed inputs. Define cost-effective measures for optimal utilization of resources;
- Keep fully conversant with ongoing and planned project component activities to facilitate realistic planning of operational support services; work closely with relevant staff of UNDP office, consult with Government officials to ensure timely and efficient provision of assistance;
- Be responsible for the satisfactory achievement and implementation of the project outputs related to revision of building codes and standards;
- Work closely with the relevant ministries, banks and Gosarchitectstroy responsible staff and coordinate activities of national consultants/organizations to be hired for the elaboration of the green mortgage scheme;
- Plan and execute a program of trainings and workshops for the relevant ministries, banks and Gosarchitectstroy staff and entrepreneurs in the regions focused on newly developed green mortgage scheme;
- Support the Project Manager in identifying possible social and economic impact of the project for the beneficiaries;

• Participate in planning and development of analytical reports, business guides and other deliverables aimed at enhancing public awareness on the role results of the project; • Plan and implement the work in accordance with the overall work-plan using both human and financial resources available in the most effective/efficient way and ensure compliance with UNDP and Gosarchitectstroy procedures; • Assist the Project Manager in identifying partnership strategies with initiative stakeholders and advise on and contribute to improvement of Project activities; • Contribute in organizing various PR events including roundtable discussions, workshops, exhibitions and trainings; • Contribute to elaboration of and 'exit' project strategy to make project outputs sustainable in the long-run; • Perform other duties and responsibilities as required.	
IV. Competencies	
Corporate Competencies:	• Demonstrating commitment to UNDP's mission, vision and values; • Exerts strict adherence to corporate rules, regulations and procedures; • Displaying cultural, gender, religion, race, nationality and age sensitivity and adaptability.
Functional Competencies:	• Fundamental knowledge of processes, methods and procedures; • Understanding the main processes and methods of work regarding to the position; • Possess basic knowledge of organizational policies and procedures relating to the position and applies them consistently in work tasks; • Demonstrating good knowledge of information technology and applies it in work assignments; • Presenting information on best practices in organizational change; • Demonstrating ability to identify problems and proposes solutions
Core Competencies:	• Demonstrating/safeguarding ethics and integrity; • Demonstrating corporate knowledge and sound judgment; • Self-development, initiative-taking; • Acting as a team player and facilitating team work; • Facilitating and encouraging open communication in the team, communicating effectively; • Creating synergies through self-control; • Managing conflict; • Learning and sharing knowledge and encourage the learning of others. Promoting learning and knowledge management/sharing is the responsibility of each staff member; • Informed and transparent decision-making.
IV. Recruitment Qualifications	
Education:	Master's degree in the following areas: finance, economy, or business administration.
Experience:	At least 5 years of progressively responsible experience in finance, banking system, construction management. Good comprehension of the energy efficiency issues, procedures for introduction and enactment of the financial/mortgage schemes; Practical experience in operations (finance/budget and general administration). Work experience in any international organization is an advantage.
Language Requirements:	Fluency in English, proficiency in Russian and Uzbek.

Others:	Strong managerial and communication skills, client-orientation, ability to work in a team; Initiative, analytical judgement, ability to work under pressure, ethics and honesty; Ability to use information and communication technology as a tool and resource; Knowledge of spreadsheet and database packages, experience in handling of web based management systems.

6. Task Manager 2: Pilots

I. Position Information	
Position Title:	Task Manager
SC range:	SC-8
Project Title/Department:	Market Transformation for Sustainable Rural Housing in Uzbekistan / Environment and Energy Unit
Project Component:	Component 2: Construction and domestic supply chain for low-carbon housing and settlements
Duration of the service:	6 month (with possible extension subject to satisfactory performance)
Work Status:	Full time
Reports To:	Project Manager

II. Background

The **objective** of the proposed project is to provide Uzbekistan's rural population with improved, affordable and environmentally friendly living conditions. The total project size is estimated at USD 130 million, with a proposed GEF/CCM contribution of USD 6 million. The project design builds directly on previous and on-going experience with sustainable, low-carbon and climate-resilient local development in Uzbekistan. Specifically, the project is designed to lower the energy intensity trajectory of Uzbekistan by building in lower energy demand in new rural homes.

The proposed project consists of four inter-linked **outcomes**. The first and principal outcome is the establishment of the green mortgage scheme to incentivize and eventually scale-up the demand for low-carbon housing. This outcome will be supported and enabled by three complementary outcomes related to strengthening domestic supply chain and capacities for construction of low-carbon housing (Outcome 2), introducing policies and regulations for low-carbon housing and settlements (Outcome 3) and raising public awareness about benefits and advantages of low-carbon housing (Outcome 4).

Under the guidance and supervision of the Project Manager, the Task Manager provides operational and thematic services ensuring high quality, accuracy and consistency of work. The Task Manager works in close collaboration with the Government counterparts, project, operations, and Programme's staff in the CO to exchange information and ensure consistent service delivery, and undertake day-to-day responsibility for operational and thematic support services for the satisfactory achievement of the project component outputs.

III. Functions / Key Outputs Expected

Thematic Functions: Pilots.

- In conjunction with Qishloq Qurilish Loyiha, develop and finalize EE house, Low-Carbon house, and Nearly-Zero Energy house designs and assessments of estimated cost and energy performance;
- In close collaboration with Gosarchitectstroy, contribute to the preparation of tender documentation for construction of the EE and Low-Carbon houses (to be organized by Gosarchitectstroy) in terms of compliance with EE requirements;
- In conjunction with Gosarchitectstroy, finalize the participation of the pilot municipalities in the construction of EE and Low-Carbon houses and ensure that both the participating houses and a control group of baseline houses are equipped to be monitored for fuel supply, energy consumption, and indoor air temperature and humidity;
- Undertake close managerial oversight over the construction process in order to ensure high quality of construction works;

- Monitor and audit actual, year-round energy performance, construction costs, and user energy costs (with an effort to cover two heating seasons by the end of the project for the first houses receiving green mortgages) in relation to a baseline RHP houses in similar conditions;
- On the basis of data collected under 2.1.3, provide performance certificates for baseline and green mortgage buildings and in conjunction with Gosarchitectstroy issue energy labels for these buildings;
- In conjunction with Task Manager 4 assess other benefits (social, economic, health, environmental) of the EE and low-carbon houses and measure satisfaction of the occupants relative to the control houses;
- Document activities on an on-going basis and prepare a lessons-learned report with recommendations on how to expand good design, financing, and labelling practices to a broader share of RHP-financed housing and to rural housing more generally;
- Conduct a technology needs assessment (TNA) for rural houses and community infrastructure
- Identify a short list of high-priority EE and RE technologies from the TNA;
- Conduct a market study for the technologies identified in Activity 2.2.2 and produce a report including an assessment of the state of the market, an actor analysis and mapping of actors, a supply chain analysis (including the analysis of potential sister supply chains), and an assessment of market barriers for these high-priority technologies;
- Provide specific recommendations to the Government on technology promotion in the context of its Roadmap for Increasing Energy Efficiency for 2015-2019;
- Provide targeted advisory support to suppliers as necessary;
- Contribute to promotion of results of the pilot EE, Low-Carbon and Nearly-Zero Energy house designs nationally through the professional networks, groups and the broader media, regionally through the CARnet network and globally through the UNDP-GEF Framework and Uzbekistan's governmental affiliations;
- Contribute to the design and enactment of new educational curricula and teacher's guide on EE, Low-Carbon and Nearly-Zero Energy house designs;
- Contribute to the relevant training and outreach activities tailored for national professionals and public at national and local levels.

Operational Functions:

- Ensure smooth and timely delivery of operational support services in accordance with work plans; analyze potential problems and respond appropriately to ensure timely delivery of agreed inputs. Define cost-effective measures for optimal utilization of resources;
- Keep fully conversant with ongoing and planned project component activities to facilitate realistic planning of operational support services; work closely with relevant staff of UNDP office, consult with Government officials to ensure timely and efficient provision of assistance;
- Be responsible for the satisfactory achievement and implementation of the project outputs related to construction and domestic supply chain for low-carbon housing and settlements;
- Plan and execute a program of trainings and workshops for the Gosarchitectstroy staff and entrepreneurs in the regions focused on construction and domestic supply chain for low-carbon housing and technology promotion;
- Support the Project Manager in identifying possible social and economic impact of the project for the beneficiaries;
- Participate in planning and development of analytical reports, business guides and other deliverables aimed at enhancing public awareness on the role results of the project;
- Plan and implement the work in accordance with the overall work-plan using both human and financial resources available in the most effective/efficient way and ensure compliance with UNDP and Gosarchitectstroy procedures;
- Assist the Project Manager in identifying partnership strategies with initiative stakeholders and advise on and contribute to improvement of Project activities;
- Contribute in organizing various PR events including roundtable discussions, workshops, exhibitions and trainings;
- Contribute to elaboration of and 'exit' project strategy to make project outputs sustainable in the long-run;
- Perform other duties and responsibilities as required.

IV. Competencies

Corporate Competencies:	• Demonstrating commitment to UNDP's mission, vision and values; • Exerts strict adherence to corporate rules, regulations and procedures; • Displaying cultural, gender, religion, race, nationality and age sensitivity and adaptability.
Functional Competencies:	• Fundamental knowledge of processes, methods and procedures; • Understanding the main processes and methods of work regarding to the position; • Possess basic knowledge of organizational policies and procedures relating to the position and applies them consistently in work tasks; • Demonstrating good knowledge of information technology and applies it in work assignments; • Presenting information on best practices in organizational change; • Demonstrating ability to identify problems and proposes solutions
Core Competencies:	• Demonstrating/safeguarding ethics and integrity; • Demonstrating corporate knowledge and sound judgment; • Self-development, initiative-taking; • Acting as a team player and facilitating team work; • Facilitating and encouraging open communication in the team, communicating effectively; • Creating synergies through self-control; • Managing conflict; • Learning and sharing knowledge and encourage the learning of others. Promoting learning and knowledge management/sharing is the responsibility of each staff member; • Informed and transparent decision-making.
V. Recruitment Qualifications	
Education:	Master's degree in the following areas: architecture and construction engineering, civil engineering, or energy engineering.
Experience:	At least 5 years of progressively responsible experience in design, architecture and construction management. Good comprehension of the energy efficiency issues, tendering and construction procedures, introduction and enactment of the new building codes (SNiPs); Practical experience in operations (finance/budget, human resources and general administration). Work experience in any international organization is an advantage.
Language Requirements:	Fluency in English, proficiency in Russian and Uzbek.
Others:	Strong managerial and communication skills, client-orientation, ability to work in a team; Initiative, analytical judgement, ability to work under pressure, ethics and honesty; Ability to use information and communication technology as a tool and resource; Knowledge of spreadsheet and database packages, experience in handling of web based management systems.

7. Task Manager 3: Building codes and standards

I. Position Information	
Position Title:	Task Manager
SC range:	SC-8

Project Title/Department:	Market Transformation for Sustainable Rural Housing in Uzbekistan / Environment and Energy Unit
Project Component:	Component 1: Building Codes and Standards
Duration of the service:	6 month (with possible extension subject to satisfactory performance)
Work Status:	Full time
Reports To:	Project Manager

II. Background

The **objective** of the proposed project is to provide Uzbekistan's rural population with improved, affordable and environmentally friendly living conditions. The total project size is estimated at USD 130 million, with a proposed GEF/CCM contribution of USD 6 million. The project design builds directly on previous and on-going experience with sustainable, low-carbon and climate-resilient local development in Uzbekistan. Specifically, the project is designed to lower the energy intensity trajectory of Uzbekistan by building in lower energy demand in new rural homes.

The proposed project consists of four inter-linked **outcomes**. The first and principal outcome is the establishment of the green mortgage scheme to incentivize and eventually scale-up the demand for low-carbon housing. This outcome will be supported and enabled by three complementary outcomes related to strengthening domestic supply chain and capacities for construction of low-carbon housing (Outcome 2), introducing policies and regulations for low-carbon housing and settlements (Outcome 3) and raising public awareness about benefits and advantages of low-carbon housing (Outcome 4).

Under the guidance and supervision of the Project Manager, the Task Manager provides operational and thematic services ensuring high quality, accuracy and consistency of work. The Task Manager works in close collaboration with the Government counterparts, project, operations, and Programme's staff in the CO to exchange information and ensure consistent service delivery, and undertake day-to-day responsibility for operational and thematic support services for the satisfactory achievement of the project component outputs.

III. Functions / Key Outputs Expected

Thematic Functions: Building codes and standards.

- Review and analyze existing information sources and current situation with energy effective buildings codes, legislative and technical documentation related to institutional system and regulations and standards currently applied in building sector, particularly in residential buildings, in order to strengthen and enforce stricter building codes for new rural housing;
- Develop a roadmap for the adoption of standards and/or certification of EE, Low-Carbon, and Nearly Zero-Energy residential buildings or another relevant designation for low-emissions buildings.
- Compile technical recommendations for the strengthened building codes, agree on targets (taking various climatic zones, availability of construction materials and cost-effectiveness considerations into account), and undertake any additional work necessary to develop the proposed codes
- Submit recommendations in the form of draft codes and any other relevant designation that certifies energy performance exceeding the minimum energy performance standards to Gosarchitectstroy
- Undertake any revisions or modifications necessary based on feedback and submit final proposed codes and other designations to Gosarchitectstroy
- Develop and submit recommendations on a "nearly zero-energy building" designation;
- Contribute to drafting new or revision of at least seven energy performance-related codes (listed in the "Building Codes" section of Annex 10) and incorporation of international best practices;
- Assist International Consultant / representatives of design institutions in development of new building codes, calculation methodology for assessment of thermal energy performance and other relevant norms and standards to incorporate mandatory provisions, reflecting the specific climatic conditions of Uzbekistan, use of energy efficient materials, equipment and technology;
- Coordinate revision of recommended versions of the building codes with relevant organizations and structures;
- Seek approval and enactment of agreed and approved versions of building codes with Gosarchitectstroy;
- In close cooperation with UMDPO, contribute to strengthening monitoring and enforcement systems to ensure compliance with EE/Low-carbon standards and new building codes to be introduced in 2017-2019;

- Develop and conduct a capacity gap assessment of Gosarchitectstroy's Department on Monitoring of Design Organizations' Activities (UMDPO) and its regional branches, responsible for all stages of building code enforcement, and implement comprehensive capacity building strategy;
- Conduct a training needs assessment and stocktaking of lessons learned from previous training provided in the public buildings sector;
- Make specific recommendations to Gosarchitectstroy on the organization of building codes enforcement;
- Provide management training on new roles and responsibilities;
- Define the process of technical training and credentialing UMDPO staff;
- Develop and launch a training-of-trainers programme for in-service training on MEPS and code compliance and building certification/labelling for inspectors and architects from design agencies;
- Develop, draft, publish, and disseminate official guidance manuals on energy-efficient design solutions, calculation methods, including spreadsheet-based software for calculating building energy performance, and interpretation of the code;
- Deliver in-service training for UMDPO staff on design reviews, site checks, commissioning procedures, and operational features of efficient buildings;
- Delivery of seminars for architects and engineers on EE design, construction, and the content of revised codes;
- Provision of material support for UMDPO, in particular its regional branches, including procurement of required software for the calculation of technical parameters of EE buildings and hardware, such as infrared imaging equipment;
- Contribute to improvement of land-use plans and zoning regulations to maximize efficient resource use and incorporate local climate considerations;
- Conduct a detailed regulatory analysis of territorial plans (master plans and APOTs) in participating rural areas to identify specific barriers to the use of efficient siting for rural communities;
- Select a pilot community from among the housing developments to be constructed under the RHP and propose and implement innovative approaches to settlement planning in the preparation of the APOT;
- Develop specific recommendations on siting to maximise efficient resource use in rural areas and on any legal or regulatory changes necessary to enable these gains;
- Provide training and capacity strengthening for at least five land-use planning officials in the central office of the State Committee on Land Resources, Geodesy, Cartography and National Cadastre and at least one staff member in each of its 14 regional offices on rural land-use practice that is sensitive to climate change considerations and encourages minimizing GHG emissions;
- Establish cooperation and exchange of information with the corresponding networking, professional groups, experts and similar international projects;
- Contribute to promotion and dissemination of new and/or revised building codes in partnership with Gosarchitectstroy;
- Contribute to the relevant training and outreach activities tailored for national professionals and public at national and local levels.

Operational Functions:

- Ensure smooth and timely delivery of operational support services in accordance with work plans; analyze potential problems and respond appropriately to ensure timely delivery of agreed inputs. Define cost-effective measures for optimal utilization of resources;
- Keep fully conversant with ongoing and planned project component activities to facilitate realistic planning of operational support services; work closely with relevant staff of UNDP office, consult with Government officials to ensure timely and efficient provision of assistance;
- Be responsible for the satisfactory achievement and implementation of the project outputs related to revision of building codes and standards;
- Work closely with the State Committee on architecture and construction of Uzbekistan (Gosarchitectstroy) responsible staff and coordinate activities of national consultants/organizations to be hired for the elaboration of building codes and performance standards;
- Plan and execute a program of trainings and workshops for the Gosarchitectstroy staff and entrepreneurs in the regions focused on newly developed / revised building codes and standards;
- Support the Project Manager in identifying possible social and economic impact of the project for the beneficiaries;

• Participate in planning and development of analytical reports, business guides and other deliverables aimed at enhancing public awareness on the role results of the project; • Plan and implement the work in accordance with the overall work-plan using both human and financial resources available in the most effective/efficient way and ensure compliance with UNDP and Gosarchitectstroy procedures; • Assist the Project Manager in identifying partnership strategies with initiative stakeholders and advise on and contribute to improvement of Project activities; • Contribute in organizing various PR events including roundtable discussions, workshops, exhibitions and trainings; • Contribute to elaboration of and 'exit' project strategy to make project outputs sustainable in the long-run; • Perform other duties and responsibilities as required.	
IV. Competencies	
Corporate Competencies:	• Demonstrating commitment to UNDP's mission, vision and values; • Exerts strict adherence to corporate rules, regulations and procedures; • Displaying cultural, gender, religion, race, nationality and age sensitivity and adaptability.
Functional Competencies:	• Fundamental knowledge of processes, methods and procedures; • Understanding the main processes and methods of work regarding to the position; • Possess basic knowledge of organizational policies and procedures relating to the position and applies them consistently in work tasks; • Demonstrating good knowledge of information technology and applies it in work assignments; • Presenting information on best practices in organizational change; • Demonstrating ability to identify problems and proposes solutions
Core Competencies:	• Demonstrating/safeguarding ethics and integrity; • Demonstrating corporate knowledge and sound judgment; • Self-development, initiative-taking; • Acting as a team player and facilitating team work; • Facilitating and encouraging open communication in the team, communicating effectively; • Creating synergies through self-control; • Managing conflict; • Learning and sharing knowledge and encourage the learning of others. Promoting learning and knowledge management/sharing is the responsibility of each staff member; • Informed and transparent decision-making.
V. Recruitment Qualifications	
Education:	Master's degree in the following areas: civil engineering, construction engineering, or energy engineering.
Experience:	At least 5 years of progressively responsible experience in design and construction management. Good comprehension of the energy efficiency issues, procedures for introduction and enactment of the new building codes (SNiPs); Practical experience in operations (finance/budget, human resources and general administration). Work experience in any international organization is an advantage.
Language Requirements:	Fluency in English, proficiency in Russian and Uzbek.

Others:	Strong managerial and communication skills, client-orientation, ability to work in a team; Initiative, analytical judgement, ability to work under pressure, ethics and honesty; Ability to use information and communication technology as a tool and resource; Knowledge of spreadsheet and database packages, experience in handling of web based management systems.

8. Task Manager 4: Capacity Building, Planning, PR and Outreach

I. Position Information	
Position Title:	Task Manager
SC range:	SC-8
Project Title/Department:	Market Transformation for Sustainable Rural Housing in Uzbekistan / Environment and Energy Unit
Project Component:	Component 4: Marketing and promotion of low-carbon rural housing and settlements
Duration of the service:	6 month (with possible extension subject to satisfactory performance)
Work Status:	Full time
Reports To:	Project Manager

II. Background

The **objective** of the proposed project is to provide Uzbekistan's rural population with improved, affordable and environmentally friendly living conditions. The total project size is estimated at USD 130 million, with a proposed GEF/CCM contribution of USD 6 million. The project design builds directly on previous and on-going experience with sustainable, low-carbon and climate-resilient local development in Uzbekistan. Specifically, the project is designed to lower the energy intensity trajectory of Uzbekistan by building in lower energy demand in new rural homes.

The proposed project consists of four inter-linked **outcomes**. The first and principal outcome is the establishment of the green mortgage scheme to incentivize and eventually scale-up the demand for low-carbon housing. This outcome will be supported and enabled by three complementary outcomes related to strengthening domestic supply chain and capacities for construction of low-carbon housing (Outcome 2), introducing policies and regulations for low-carbon housing and settlements (Outcome 3) and raising public awareness about benefits and advantages of low-carbon housing (Outcome 4).

Under the guidance and supervision of the Project Manager, the Task Manager provides operational and thematic services ensuring high quality, accuracy and consistency of work. The media company/organization will be contracted by the project in order to achieve the set goals/outputs, which will report directly to the Task Manager.

The Task Manager also works in close collaboration with the Government counterparts, project, operations, and Programme's staff in the CO to exchange information and ensure consistent service delivery, and undertake day-to-day responsibility for operational and thematic support services for the satisfactory achievement of the project component outputs.

III. Functions / Key Outputs Expected

Thematic Functions: Public awareness raising, training and outreach.

- Conduct a capacity needs assessment, including a baseline survey of awareness among rural homebuyers and other rural residential energy consumers;
- Develop communications and partnership strategy;
- Develop and disseminate outreach publications and other media products (e.g. radio spots);
- Work with government counterparts to open rural resource centers to showcase EE and renewable technologies, working closely with project staff and consultants to use the center to support training and outreach;
- Provide training on outreach related to the EE and Low-Carbon houses to banks and government agencies;
- Conduct survey to assess changes in knowledge and awareness-raising;
- Select pilot districts where RHP is active for participation in sustainable local development (SLD) training;
- Consult with stakeholders and beneficiaries to determine priorities for training;

- Customize a training curriculum based on SLD approaches used in Central Asia;
- Select software and curriculum for settlement-level energy management for use in training and monitoring;
- Deliver training in 12 regions (with the exact number of settlements in each region to be determined in agreement with regional governments);
- Develop a strategy for replicating to other settlements in participating districts and other districts;
- Provide recommendations to the government for introducing energy management practices for settlements through national policies/legislation/regulations;
- Document the training process and uptake of SLD and energy management concepts after training and 2 years ex post.

Operational Functions:

- Ensure smooth and timely delivery of operational support services in accordance with work plans; analyze potential problems and respond appropriately to ensure timely delivery of agreed inputs. Define cost-effective measures for optimal utilization of resources;
- Keep fully conversant with ongoing and planned project component activities to facilitate realistic planning of operational support services; work closely with relevant staff of UNDP office, consult with Government officials to ensure timely and efficient provision of assistance;
- Be responsible for the satisfactory achievement and implementation of the project outputs related to public awareness raising, training and outreach;
- Plan and execute a program of trainings and workshops for the Gosarchitectstroy staff and entrepreneurs in the regions focused on public awareness raising, capacity building, training and outreach;
- Support the Project Manager in identifying possible social and economic impact of the project for the beneficiaries;
- Participate in planning and development of analytical reports, business guides and other deliverables aimed at enhancing public awareness on the role results of the project;
- Plan and implement the work in accordance with the overall work-plan using both human and financial resources available in the most effective/efficient way and ensure compliance with UNDP and Gosarchitectstroy procedures;
- Assist the Project Manager in identifying partnership strategies with initiative stakeholders and advise on and contribute to improvement of Project activities;
- Contribute in organizing various PR events including roundtable discussions, workshops, exhibitions and trainings;
- Prepare and publish the project newsletters, articles and press-releases and awareness raising events on the project's activities and accomplishments for national/international printed and electronic media;
- Ensure that project visibility is achieved through various outreach and PR actions and activities, thematic promotional materials, how-to guides and success stories;
- Contribute to the promotion of gender equality by reaching, involving and benefiting both women and men in project activities (gender mainstreaming) ensuring gender disaggregated data available;
- Encourage awareness and promotion of gender equality among project staff and partners;
- Ensure that gender analysis is part of every substantive analysis and report of the project;
- Ensure that men, women and traditionally marginalized groups are given due consideration during project implementation;
- Contribute to elaboration of and 'exit' project strategy to make project outputs sustainable in the long-run;
- Perform other duties and responsibilities as required.

IV. Competencies

Corporate Competencies:	• Demonstrating commitment to UNDP's mission, vision and values; • Exerts strict adherence to corporate rules, regulations and procedures; • Displaying cultural, gender, religion, race, nationality and age sensitivity and adaptability.
Functional Competencies:	• Fundamental knowledge of processes, methods and procedures; • Understanding the main processes and methods of work regarding to the position;

	• Possess basic knowledge of organizational policies and procedures relating to the position and applies them consistently in work tasks; • Demonstrating good knowledge of information technology and applies it in work assignments; • Presenting information on best practices in organizational change; • Demonstrating ability to identify problems and proposes solutions
Core Competencies:	• Demonstrating/safeguarding ethics and integrity; • Demonstrating corporate knowledge and sound judgment; • Self-development, initiative-taking; • Acting as a team player and facilitating team work; • Facilitating and encouraging open communication in the team, communicating effectively; • Creating synergies through self-control; • Managing conflict; • Learning and sharing knowledge and encourage the learning of others. Promoting learning and knowledge management/sharing is the responsibility of each staff member; • Informed and transparent decision-making.
V. Recruitment Qualifications	
Education:	Master's degree in the following areas: public relations/journalism obtained at recognized institutions, general management and business administration.
Experience:	At least 5 years of progressively responsible, practical experience in PR activities, elaboration of outreach and educational-training programs as well as general management and business administration; Experience in web content development; Good comprehension of the energy efficiency issues; Practical experience in operations (finance/budget, human resources and general administration). Work experience in any international organization is an advantage.
Language Requirements:	Fluency in English, proficiency in Russian and Uzbek.
Others:	Strong managerial, presentation and communication skills; Client-orientation, ability to work in a team; Initiative, analytical judgement, ability to work under pressure, ethics and honesty; Ability to use information and communication technology as a tool and resource; Knowledge of spreadsheet and database packages, experience in handling of web based management systems.

9. Driver

I. Position Information	
Position Title:	Driver
SC range:	SC-2
Project Title/Department:	Market Transformation for Sustainable Rural Housing in Uzbekistan / Environment and Energy Unit
Duration of the service:	6 month (with possible extension subject to satisfactory performance)
Work Status:	Full time
Reports To:	Project Manager
II. Background	

Under the direct supervision of the Project Manager, the Driver will be responsible for the following:	
III. Functions / Key Outputs Expected	
• Drive the office vehicle for the transport of authorized personnel; • Deliver and collect mail, documents and other items, meet official personnel at the airport and facilitates immigration and custom formalities and make errands for the project as required; • Be responsible for the day-to-day maintenance of the assigned vehicle, checks oil, water, buttery, brakes, tires, etc; • Perform minor repairs and arranges for another repairs; • Ensure that the vehicle is kept clean; log official trips, daily mileage, gas consumption, oil changes, greasing; • Ensure that the steps required by rules and regulations are taken in case of involvement in accident; • Perform other duties, as required by the Project Manager.	
IV. Recruitment Qualifications	
Education:	Secondary education
Experience:	At least 5 years of relevant work experience; Driver's license 'B and C' categories; Work experience in any international organization is an advantage.
Language Requirements:	Proficiency in Uzbek and Russian, basic knowledge of English.
Others:	Honesty, responsiveness, punctuality; Client-orientation, ability to work in a team.

Other Key Positions

10. International Contractor / Financing Mechanisms Specialist

I. Position Information	
Contract Title:	IC / Financing Mechanisms Specialist
Type:	IC
Project Title/Department:	Market Transformation for Sustainable Rural Housing in Uzbekistan / Environment and Energy Unit
Duration of the service:	25 working days over the period October 2016 to March 2018
Duty station:	Home-based, with two missions to Tashkent
Reports to:	Project Manager
II. Background information	
The **objective** of the proposed project is to provide Uzbekistan's rural population with improved, affordable and environmentally friendly living conditions. The total project size is estimated at USD 130 million, with a proposed GEF/CCM contribution of USD 6 million. The project design builds directly on previous and on-going experience with sustainable, low-carbon and climate-resilient local development in Uzbekistan. Specifically, the project is designed to lower the energy intensity trajectory of Uzbekistan by building in lower energy demand in new rural homes. The project consists of four inter-linked **outcomes**. The first and principal outcome is the establishment of the green mortgage scheme to incentivize and eventually scale-up the demand for low-carbon housing. This outcome will be supported and enabled by three complementary outcomes related to strengthening domestic supply chain and capacities for construction of low-carbon housing (Outcome 2), introducing policies and regulations for low-carbon housing and settlements (Outcome 3) and raising public awareness about benefits and advantages of low-carbon housing (Outcome 4).	

The project is designed to complement the Government of Uzbekistan's Rural Housing Programme, which supports preferential mortgage financing for new rural houses through participating banks. Specifically, Component 1 of the project will pilot a "green mortgage" mechanism, in which homebuyers will initially be able to purchase an energy-efficient or low-carbon pilot home for the cost of a standard RHP home. The EE and renewable features of the home will initially be covered by a subsidy from the Global Environmental Facility, which will be administered from a Project Implementation Unit. In a related area, this component also includes training for government officials and commercial bank employees on how the mechanism will work and how to promote it among clients who are RHP homebuyers.

In addition, Component 1 includes the exploration of a potential fund to support the installation of solar PV units in existing rural houses. While there is interest in these units in rural areas because of issues with the availability of electricity from the grid, the upfront cost of these units is prohibitively high for rural consumers, and commercial interest rates are also high. The Government has a strong stated interest in the development of solar power, but there is no current financing mechanism to support consumer investments in these technologies.

The Consultant will report to the Project Manager and work closely with the Task 1 Manager to provide research, advisory, and training services in the area of financing mechanisms. Ultimately, the Consultant will be responsible for identifying a feasible mechanism for the green mortgage designed for the pilot EE and Low-Carbon houses proposed in the project and for conducting the necessary market, economic, and financial analysis regarding this mechanism. Recommendations must include specific logistical and administrative arrangements that are compatible with UNDP and GEF procedures regarding cash transfers and that are complementary to RHP mortgage procedures. The consultant will also be responsible for conducting the necessary market, economic, financial, and institutional research to propose a specific mechanism or mechanism(s) for financing solar PV units and making recommendations about the implementation of those mechanisms. He/she will advise the project team directly and provide analysis and specific recommendations on the design of the green mortgage mechanism as proposed in the project and a possible mechanism to finance solar PV units for rural houses. Furthermore, the Consultant will provide training materials and contribute to trainings on the green mortgage mechanism for government officials and bank employees.

III. Functions / Key Outputs Expected

Thematic functions:

- Conduct the necessary institutional, economic, and financial analysis regarding the administration of the Green Mortgage subsidy
- In coordination with the Project Team, identify a feasible implementation mechanism for the green mortgage designed for the pilot EE and Low-Carbon houses proposed in the project
- Provide guidance on assessing the capacity of organizations to administer the subsidy, on assurance procedures, and on any capacity strengthening measures that may be needed in the institution identified as the implementation unit for the Green Mortgage subsidy.
- Provide recommendations to the Project Team regarding specific logistical and administrative arrangements that are compatible with UNDP and GEF procedures regarding cash transfers and that are complementary to RHP mortgage procedures.
- Compile recommendations and research in a report on the Green Mortgage mechanism with a detailed design of the mechanism and refine and finalize the report in response to feedback from the project team and stakeholders
- Conduct the necessary market, economic, financial, and institutional research to propose a specific mechanism or mechanism(s) for financing solar PV units
- Compile recommendations and research in a report on the solar PV mechanism and refine and finalize the report in response to feedback from the project team and stakeholders
- Work with the Task 1 manager and other project staff as necessary to develop training materials on green mortgages and the proposed Green Mortgage mechanism

Operational functions:

- Provide guidance to project staff (specifically the Task 1 Manager) to obtain the necessary financial and operating information from relevant financial institutions.
- Attend meetings with institutional stakeholders as necessary to assess institutional capacity for implementation of the mechanisms proposed and to assess interest and capacity to implement financing mechanisms for residential solar energy.
- Work with the project team to develop training on the Green Mortgage mechanism
- Deliver training, including training-of-trainers if necessary, regarding energy financing and marketing for project-related financing mechanisms

- Provide reports as requested in a time fashion and present relevant conclusions to the Project Team and stakeholders during missions to Tashkent

Outputs

1. Two reports on the Green Mortgage mechanism and a solar PV financing mechanism. Written work will be supplemented by other requested consultation by phone, Skype, and in person.

2. Reports on missions and participation in project training events and consultations as necessary. The Consultant shall provide reports on each of two missions to Tashkent (for a total of 5 working days each).

IV. Deliverables and timeframe

The following deliverables and indicative schedule are expected from the consultancy contract. The final schedule will be agreed upon in the beginning of consultancy assignment.

#	Deliverables	Timeframe
1	Draft Green Mortgage market report with logistical and administrative recommendations	March 15, 2017
2	Final Green Mortgage market report with logistical and administrative recommendations	June 15, 2017
3	Draft Solar PV financing report, including a proposed mechanism for financing with recommendations on implementation	March 15, 2017
4	Final Solar PV financing report, including a proposed mechanism for financing with recommendations on implementation	June 15, 2017
5	Training plan and draft curriculum for Green Mortgage training sessions with banks and government.	May 15, 2017
6	Reports on participation in missions to Uzbekistan 1st report (2016) 2nd report (2017)	Within two weeks of completion of mission

IV. Payment Conditions

This is a lump sum contract that should include costs of consultancy and international travel costs (in-country air ticket costs will be covered by the project), accommodation and meal (DSA or per diems in Tashkent and provinces) and visas costs required to produce the above deliverables.

Payment will be released in 7 installments upon timely submission of respective deliverables and their acceptance by the Supervisor and UNDP CO.

V. Recruitment Qualifications

Education:	Advanced degree (master's level, equivalent or higher) in the field of business, economics, or finance.
Experience:	At least 10 years of practical experience in: • development of financial mechanisms and funds • market research and analysis • mortgage finance • experience with financing and incentive programs for EE and RES measures in the residential sector
Language Requirements:	Proficiency in English, excellent analytical and presentation skills.
Others:	Outstanding time-management, organizational and interpersonal skills Experience with donor-funded energy efficiency schemes would be an advantage.

Annex 8: Project Risk Assessment

Key risks underlying the project have been analyzed and qualitatively assessed in connection with the context of the target sites for the project. Potential risks include the following:

Description	Rating	Explanation
Financial Risk	Medium	Due to current interest rates and loan terms, there is a moderate risk that the financial mechanism developed by the project could experience low-uptake by borrowers; however, it should be noted that the mortgage market has been growing steadily in the last 6 years and currently still is experiencing unfulfilled demand. The project will mitigate this risk by studying the loan market thoroughly, working closely with commercial banks to pilot mechanisms, and developing a financial incentive that is responsive to the sensitivities of lenders and borrowers.
Market risk	Medium	Low residential energy tariffs and the subsidized domestic price of natural gas may limit demand for EE/RE technologies in rural housing sector. However, the risk is counter-balanced by the fact that rural population is already suffering from chronic energy shortages and unstable supply of energy from centralized sources (gas and power network). Therefore, the demand and motivation for more EE houses and use of RE stems from the need to improve living conditions; i.e., consumers are willing to pay to ensure a secure supply of energy.
Technical Risk	Low-Medium	There is a low to moderate risk that the technologies in the project could experience difficulties in operations or in maintenance. This risk will be mitigated by thorough screening of technologies, on-going support to manufacturers and distributors, and monitoring.
Political Risk	Low	There is only a low risk that energy efficiency and renewable energy might cease to become a priority for the Government of Uzbekistan. Resource efficiency is a pillar of the country's strategic planning documents, and the government is currently very supportive of on-going projects in this area.
Climate Change Risk	Low	The climate-related risk of the project is considered low because long-term climate impacts (i.e. temperature extremes, increased average temperatures, and reduced precipitation) will be directly address through housing units that will be more resource efficient and comfortable (and yet more affordable) at both high and low temperatures.
Environmental and Social Risks	Medium	Although the project will not be directly responsible for rural housing and infrastructure construction (with the exception of a single Nearly-Zero Energy pilot house), it will provide financing for the installation of materials and equipment in rural houses and will support community planning related to housing and infrastructure design. Details on the environmental and social risks are provided in Annex 12 and 12a. The project will mitigate this risk by implementing project activities in accordance with UNDP's environmental and social screening policies to ensure that any environmental risks are minimized. Specific analysis has been undertaken during the PPG to ensure that the project design is inclusive and that women and other vulnerable groups will be explicitly considered during project implementation. Furthermore, project staff will work with other national and international stakeholders who are directly involved in procurement, tendering, construction, and other activities related to the pilot rural houses with possible environmental effects in order to ensure that these effects are minimized.

Social and Environmental Safeguards

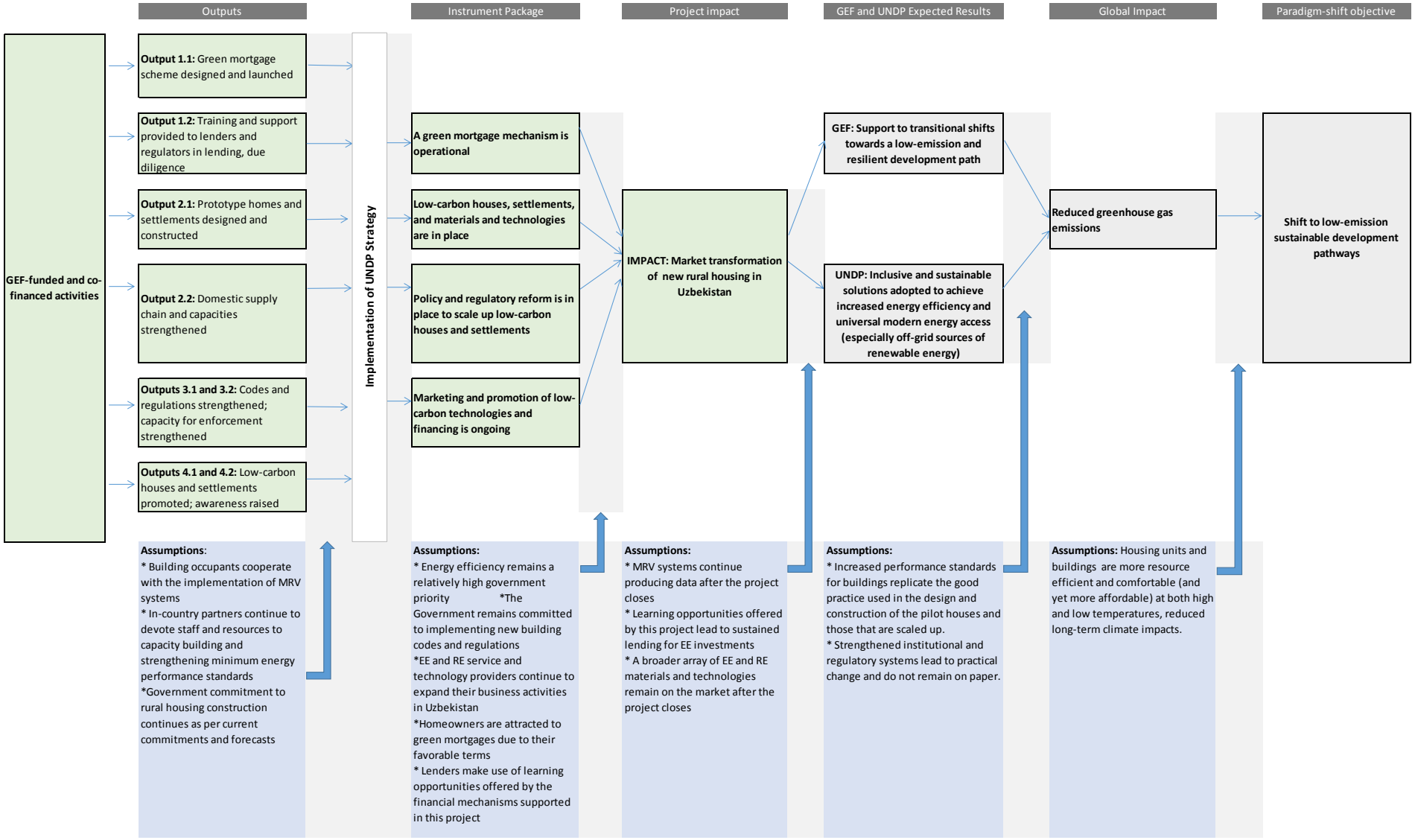
The overall social and environmental risk category for this project is moderate.

As detailed in the UNDP Environmental and Social Impact Assessment (ESIA) in Annex 12, the proposed project will involve a series of small-scale investments, and it will improve planned construction. Good practice in pollution prevention and abatement related to these investments is already mandated through bilateral agreements between the Government of Uzbekistan and the Asian Development Bank pertaining to rural housing construction in Uzbekistan. In addition, project staff will also monitor construction activities at the pilot sites in order to provide an additional layer or oversight.

Over the course of the project, a UNDP risk log will be regularly updated in intervals of no less than every six months in which critical risks to the project have been identified. At the time of project formulation, strong political commitment from national as well as municipal authorities is evident which will limit a number of risks from materializing. Consistent involvement of a diverse set of partners, including local municipalities, community organizations and NGOs will further reduce these risks. Environmental and social grievances will be reported to the GEF in the annual PIR.

This project is not required to undertake an environmental impact assessment, and a letter to this effect from the Government is provided as Annex 13.

Annex 9 Theory of Change



Annex 10 Technical Annex

This annex addresses a variety of issues related to cost, performance, and operating conditions for the energy-efficient and renewable energy materials, equipment, and technologies that were considered in the development of the illustrative EE House and Low-Carbon House.

The following three reports are attached separately but should be considered as a part of this annex:

- ***"Analysis of results of energy monitoring over the heating season of 2014-2015 after application of energy-efficient measures and renewable energy in a pilot four-room rural house"*** (Tashkent 2015). This analytical report was commissioned under the UNDP-GEF project on Energy Efficiency in Public Buildings specifically to assess energy performance a pilot 4-bedroom rural house that was constructed using both energy-efficient and renewable features. The design of the rural house, which was constructed in the Tashkent Region of Uzbekistan, received a thermal performance rating of III (the most energy-efficient level) and a building energy rating of A (also the most energy-efficient level). The report includes audit findings and energy consumption data. It is important to understand the context in which the pilot home was built: it was *not* intended to demonstrate cost-effective measures to improve energy performance, but rather to pilot a variety of measures that were feasible but not common on the market in Uzbekistan and better understand their performance.

- ***Results of Implementation of Energy-Efficient Solutions in Eight Pilot Buildings*** (Tashkent 2014). This report summarizes the findings of the energy audits conducted for the 8 pilot buildings constructed under the UNDP-GEF project on Energy Efficiency in Public Buildings. The audits were carried out by the Institute of Energy and Automation of the Academy of Sciences of Uzbekistan in 2013 and 2014. While the audits covered public buildings, they are instructive because they include a variety of energy-efficient materials and technologies, and because it includes data on buildings in different climatic regions of Uzbekistan. The audits found that the renovated public buildings had reduced energy use by an average of 52%, GHG emissions by an average of 53%, and energy bills by an average of 68%.

- ***Energy Efficiency in Buildings: Untapped Reserves for Uzbekistan Sustainable Development: Summary*** (Tashkent 2014). This report, which was commissioned by UNDP and carried out by CENEf under the direction of Igor Bashmakov, covers current barriers to energy efficiency in Uzbekistan, models projected demand for energy through 2050, and identifies high-priority measures for improving efficiency. Additional data and findings on Uzbekistan are also available in the broader report on transition economies, *Energy efficiency Orbits for Transition Economies: Final Report,* which CENEf prepared for the Copenhagen Centre on Energy Efficiency in 2015.

The Energy Efficient House and the Low-Carbon House: An Illustrative Example

The following table provides an overview of the measures used in the sample proposed home, their rough estimated cost, and their estimated energy savings.

Table A10.1: Proposed EE/RE measures, energy saving and their cost for a standard 4-room (total area of 162 m^2) rural family house

						EE Home		**Low-carbon**	
#	**Type**	**Description**	**Costs, USD**	**Costs, UZS**	**Energy saving, kWh**	**Costs, USD**	**Saving, kWh**	**Costs, USD**	**Saving, kWh**
1		***Energy Efficiency***							
1.1	Construction techniques	Installation of windows close to the line of the outer walls, with foam sealing of joints	-	-	280	-	280	-	280
1.3	Thermal envelope	Thermal insulation of external walls	661	1,594,993	5,295	661	5,295	661	5,295
1.4	Thermal envelope	Thermal external insulation of the socle (foundation walls)	921	2,222,373	1,928	921	1,928	921	1,928
1.5	Heating equipment	Installation of thermostatic valves for radiators and heat-reflecting foil panels installed on the wall behind the radiators	208	501,904	1,930	208	1,930	208	1,930
2		***Renewable energy***		-					
2.1	Electricity supply	Solar PV (electric energy) for lighting	1,990	4,801,870	240			1,990	240
		TOTAL	5,517	13,312,521	13,629	**1,790**	**9,433**	**3,780**	**9,673**

It is important to understand that there are multiple combinations of design and technical measures that could be proposed for the EE and Low-Carbon houses. These examples represent the intersection of accessible materials, technologies that have been proven in test conditions, and energy efficiency measures that are relatively cost-effective. The selection in the illustrative example was designed to maximize savings at the lowest possible incremental cost using available materials and technologies. A secondary consideration for the initial houses was the need to resemble the standard RHP house, the design of which is currently centrally mandated.

Other measures that were considered include the use of autoclave aerated concrete panels, efficient autonomous boilers, solar water heaters, and air exchangers with heat recovery, and attic insulation. It is expected that all of those technologies will become more widely available at lower prices in Uzbekistan during the project implementation period. Others, such as reflective paint pigments, may also be introduced to the market through the activities in Component 2 of the project. It is also expected that a fairly broad range of prices for insulation will narrow, and that the market for exterior and attic insulation will become more competitive and countrywide in scope. In fact, the market development activities under this project are designed specifically to improve supply, and the wide-spread construction of homes is also expected to reduce the price of EE and RE materials and technologies as domestic production increases and economies of scale develop.

It is also important to note that current energy supply conditions may affect the selection of appropriate technologies. For example, the EE and low-carbon houses assume the use of an electric water heater because gas outages can make an efficient, gas-fired heater difficult and even dangerous to operate when there are fluctuations in the gas grid.[108] Furthermore, while the cost-effectiveness of the solar PV system is not as great as the EE measures, it is extremely attractive to rural homeowners, who are seeking a reliable source of power for lighting and appliances in regions where power blackouts occur regularly.

The proposed project envisions that when the financing mechanism is scaled up, the criteria for eligibility for an EE home and a low-carbon home will be based on energy performance standards rather than on a checklist of particular technologies.[109] This approach will allow designers and builders to take advantage of local conditions, ranging from landscaping options to natural cooling and ventilation options. It will also allow designers and builders to select materials and equipment based on cost and availability, both factors that vary depending on the region of the country. For example, the new basalt insulation board factory in the Tashkent region will provide these materials with minimal transportation costs, while other options (such as the use of exfoliated/expanded vermiculite as loose-fill attic insulation) may offer promising local solutions in the Republic of Karakalpakstan.

Regional Climatic Variation and Energy Performance

Heating Degree-Days are a characteristic parameter of the outdoor temperature in a given region where construction is taking place.

In terms of climate (and subsequent heating needs), Uzbekistan can be divided into three areas:

- More than 3000 heating degree-days (Karakalpakstan, Khorezm Region)
- Fewer than 2000 heating degree-days (Sukhandarya Region)

[108] A household observation conducted during the project preparation period found some rural homeowners had retrofitted gas-fired boilers to run on biomass or electricity in the event of a gas outage (Rudenko 2015: 6).

[109] For example, the IEA report *Cities, Towns, and Renewable Energy* notes that certain technologies are more suitable in given geographic and climatic conditions, such as solar PV for low-latitude, high sunshine areas. Source: IEA (2009): 16.

- Between 2000 and 3000 heating degree-days (all other remaining regions)

These variations are reflected in energy performance standards in building codes such as (KMK 2.01.04-97* Building Heating Technologies), which regulates the thermal resistance of the building envelope. Heating degree-days have also been introduced into the methodology in the guidelines for designing new, energy-saving home heating.

Current Building Performance Requirements for Residential Buildings

Standard specific heat consumption for heating and natural ventilation for rural residential buildings (W/m^2) is calculated incorporating the estimated temperature of the outside air (in view of heat release from the building) depending on the degree-days of the heating season in the specific construction region of Uzbekistan. This heat consumption is shown in Table A9.2.

Table A10.2: Heat Consumption of Residential Buildings by Construction Region (W/m^2)

Type of rural house		Standard specified energy consumption for heat and natural ventilation Watt per 1 square meter of floor space for a given value of heating degree-days (HDD)		
		Up to 2000 HDD (W/m^2)	from 2000 to 3000 HDD (W/m^2)	More than 3000 HDD (W/m^2)
Single-family	1-storey	129	136	150
	2-storey	103	108	122
Multi-unit	1-storey	116	123	136
	2-storey	90	96	108

Source: Gosarchitectstroy

In Uzbekistan, this approach to determining the specific energy consumption for particular climatic conditions using the W/m2 indicator is more than justified for use in building design, particularly because it defines the parameters for external walls and the required capacity of heating systems, which can ensure acceptable indoor temperature conditions in extreme weather conditions. However, global practice tends to express specific energy consumption in terms of power consumption in a given year, which uses a different unit: kWh/m^2. It is possible to convert to this unit for expressing annual energy consumption in buildings, because the characteristic values of specific energy consumption and stated weather conditions are known.

Table A9.3 shows the results of calculation of the indicative annual specific heat consumption ($kWh/m^2/yr$) by region of Uzbekistan on the basis of indicators of standard specific heat consumption (W/m^2) that correspond to building code KMC 2.01.18-2000* ("Norms of energy consumption for heating, ventilation and air conditioning of buildings and structures ").

Table A10.3: Average Annual Energy Consumption in Residential Buildings by Region and Building Type (kWh/m^2/year)

Annual specific heat consumption (kWh/m^2/yr) by region of Uzbekistan on the basis of indicators of standard specific heat consumption (W/m^2) that correspond to building code KMC 2.01.18-2000*								
№	Region	Coldest 5-day average temperature (^{0}C)	Length of Heating Season (days)	Average Temperature during Heating Season (^{0}C)	Allowable specific thermal energy consumption for the heating season (kWh/m^2/yr) for houses that are			
					Single-Unit		Multi-Unit	
					1-storey	2-story	1-storey	2-storey
1.	City of Tashkent	-14	147.5	3.35	236	187	213	166
2.	Andijan	-13	146	2.4	254	202	230	179
3.	Bukhara	-12	144	3.9	236	188	214	167
4.	Jizzakh	-16	143.5	3.45	215	171	195	152
5.	Karakalpakstan	-19	180.5	-0.45	341	277	309	245
6.	Kashkadarya	-14	133.5	4.45	199	158	180	141
7.	Navoi	-13	141,5	4.2	221	176	200	156
8.	Namangan	-14	143,5	2.3	244	194	221	172
9.	Samarkand	-12	152,5	4.05	248	197	224	175
10.	Sukhandarya	-10	112,5	5.4	170	135	152	118
11.	Syrdarya	-19	150	2.7	217	172	196	153
12.	Fergana	-14	148	2.65	247	196	223	174
13.	Khorezm	-18	162	1.2	289	235	262	208

Source: Gosarchitectstroy

As Table A9.3 shows, allowable rate of specific annual heat consumption ranges from 170 kWh/m^2/yr in the Surkhandarya region to **341 kWh/m^2/yr** in the Republic of Karakalpakstan. If we compare these norms

with those for public buildings, it can be seen that current building codes allow for houses that are *twice as energy-intensive* as public buildings.

These figures indicate that the reduction in the rate of energy consumption in residential buildings when introducing stricter thermal performance requirements in building codes should be more than doubled. In addition, building codes KMC 2.01.18-2000* ("Norms of energy consumption for heating, ventilation and air conditioning of buildings and structures ") and KMK 2.01.04-97* ("Thermal Engineering") should be amended to introduce mandatory maximum limits on annual energy consumption (kWh/ m^2/yr) and determine annual rates of energy consumption.

Regional Climatic Variation and Other Construction Issues

In addition to heating zones, Uzbekistan is also divided into three "construction-climatic" zones:

- Zone I: This zone is comprised of territories with an arid climate with extreme climate conditions in the summer. Zone I is sub-divided into three sub-zones: Zones I.a and I.b have an extended period of very high summer temperatures; Zones I.a, I.b, and I.c have high dust levels (excessive exposure to dust is a major health risk in many parts of Uzbekistan[110]); and I.c also has cold winters. Housing designs in Zone I must provide the maximum amount of protection against extreme summer heat as well as protection against wind and dust; e.g., designs that shield courtyards and use features such as covered porches and window shutters and external blinds.
- Zone II: This zone is comprised of foothill regions and oases, valleys, and areas with low mountains with relatively favorable soil conditions and growing conditions. Home designs in this area should be able to take advantage of the climate conditions while protecting against overheating. This can be done by opening the house to landscaped areas for improved ventilation, and landscaping can be an important factor in protecting the house from the sun during hotter months.
- Zone III: This zone consists of high-elevation mountainous regions with extreme winter conditions. Houses in this zone should be designed to protect occupants against extreme cold, which means that they should have a compact design and should be sited using a SE-SW orientation. Furthermore, the recommended floor-to-ceiling height is slightly lower than in the other zones with less extreme winter conditions.

Building Codes

Building codes are described in the body of the project document. During the course of project preparation, a national expert on energy efficiency in buildings reviewed these codes and identified those in need of updating. The following seven codes were identified as not fully reflecting the current policies promoting energy efficiency, and the project team will provide specific recommendations on their revision to the government in during project implementation.

- Code ShNK 2.08.01-05: "Residential Buildings"
- Code ShNK 2.07.04-12: "Architecture-Planning Organization of Territories in Rural Areas" (APOT)
- Code KMK 2.01.05-98: "Daylighting and Artificial Lighting"

[110] WHO (2015).

- Code KMK 2.04.16-96: “Solar Hot Water Supply Units” (including requirements for solar photovoltaic units)
- KMK 2.01.04-97*: “Construction Heating Technology” (which introduces a accounting methodology for calculating annual energy consumption)
- KMK 2.01.18-2000*: “Normative Energy Accounting for HVAC Systems” (which introduces minimum energy performance requirements)
- KMK 2.04.05-97*: “Heating, Ventilation, and Air Conditioning”

Town Planning in Rural Areas

The master plan, or ***general plan***, for rural settlements is the primary town planning document that outlines the long-term prospects for the development of the villages; their planning structures; residential, industrial, municipal, storage and other functional areas, networks of social services for the population, transport systems and infrastructure; and environmental protection principles. The master plan is a binding document for all organizations engaged in design and construction in rural areas. In order to form master plans for rural areas, the government develops architectural-planning territorial organization projects, or ***APOT***s.

The APOT is regulated by a distinct code, Code ShNK 2.07.04-12, and it is designed to integrate rural development by incorporating various issues such as agricultural production, the scope of long-term development of rural areas, employment, existing infrastructure, the organization of social services and health care, cultural and community networks, and rural environmental characteristics. The planning horizon of an APOT is 10-15 years, with a 5-7-year construction planning horizon for initial construction.

Each APOT includes an ***explanatory note*** that consists of four sections: the current status of the territory in question, project proposals, engineering equipment, and technical and economic indicators. Section I provides an analysis of the location, including settlement patterns and natural conditions; agriculture; natural attributes and landscaping; production facilities, employment; current building stock, social institutions, cultural and public services, and the current state of the environment. Section II contains the proposed zoning for the territory; population projections; estimates of the size of residential areas; potential employment opportunities; proposed community infrastructure, including cultural institutions and pre-school and school education; road networks; and proposals to protect the environment. Section III contains a draft proposal for how the government will supply water, sanitation, electricity, heating, telephone service, and radio reception. Finally, Section IV contains the basic technical and economic parameters of the APOT. Once the government approves the APOT, it is used as the basis for developing the master plan of the relevant settlement, or a settlement “passport”.

The composition of this passport includes: a schematic drawing of the master plan of the rural village, made on a down-scaled copy of the main drawing of the general plan or APOT, the basic technical and economic parameters of the scheme of the general plan of the rural settlement for the base year, primarily the initial construction and expected timeframe and the current and projected boundaries of the village. The main technical and economic indicators of the passport include the following data for the base year and time frame under consideration 1) the total population of the rural settlement; 2) its demographic structure; 3) human resources (working-age population; non-working population, employed population), 4) areas within the boundaries of the rural village (residential, industrial storage, areas unsuitable for development, etc.); 5) population density in built-up areas; 6) housing stock (for the total area); 7) average amount of land per person; 8) average density of housing; 9) construction of public and commercial buildings (kindergartens, secondary schools, healthcare facilities, stores, cultural and sports facilities; and public utilities); 10) infrastructure (water supply, sewerage, electricity supply, gas supply, heating, telephones); 11) land

management (irrigation, effects on groundwater, protection from flash floods); and 12) environmental protection (boundary zones around industrial facilities, protected areas, landscaping for noisy areas).

A review of the APOT process during the project preparation phase indicated that issues to reduce energy consumption and improve energy efficiency in buildings were not sufficiently reflected in the current APOT process (or the code that regulates it). Therefore, it would be advisable to propose language to integrate those considerations into the design and review of APOTs. The development of the APOT provides an opportunity to consider energy provision, the interaction between energy and water resources, and a variety of other issues that could lead to reductions in fuel use and improved local environmental quality.

Annex 11: GHG Emissions Reduction Calculations and Methodology

Emission reductions for this project were calculated based on current guidance from the GEF Secretariat. Specifically, the calculations are based on methodologies introduced for GEF-funded energy efficiency projects by the GEF STAP (Scientific and Technical Advisory Panel) in March 2013. As per current practice, direct, direct post-project, and indirect emission reductions were estimated. Full calculations are provided in the GEF Climate Change Tracking Sheet, which has been submitted concurrently with this document to the GEF. Default calculations in the estimates are those provided by the STAP.

Overall, the project calculations assume two primary sources of emission reductions: 1) direct emission reductions from houses constructed under the project, which are more efficient than those in a "business as usual" scenario; and 2) indirect emission reductions from the introduction of stricter building codes, which will improve the thermal performance off all new buildings. As such, the estimates include two component-specific estimates of emission reductions.

Direct Emission Reductions

Direct emission reductions were calculated as depicted in Table A11.1. As projected in the project activities, it is proposed to finance the pilot homes at a ratio of 95% EE houses and 5% Low-Carbon houses. In the pilot mechanism launched under Component 1, 1,588 homes will be constructed. The calculations below assume an emission factor of 0.561 tCO_2/GJ for natural gas, and an emission factor of 0.569 tCO_2/MWh for electricity, assuming a 10% rate of losses in grid transmission and distribution.

This scenario also assumes that the number of "standard" houses constructed under the RHP in 2019 and 2020 will have to comply with stricter thermal performance requirements under the strengthened residential building codes that the project will introduce. This scenario estimates that the houses under the new code will be 20% more efficient than the houses under the current code, and that code compliance rates for the RHP houses, which will be monitored by ADB, UNDP, and Gosarchitectstroy, will be 80%.

Table A11.1: Direct Emissions from EE and Low-Carbon Rural Housing

DIRECT EMISSIONS		
New EE homes		Units
Direct electricity savings	-	kWh
Direct natural gas savings	34	GJ
Number of houses of this type built	1,509	
Total direct energy savings per year	51,306	GJ
Total direct GHG savings	57,566	tonnes CO_2
New Low Carbon homes		
Direct electricity savings	241	kWh
Direct natural gas savings	34	GJ
Number of houses of this type built	79	
Total direct energy savings , 2016-2021	6,945	GJ
Total direct GHG savings	3,270	tonnes CO_2eq
Strengthened Building Codes		
Total new floor space (2019-2020 RHP housing construction: 37,000 houses @162m^2)	5,670,000	m^2
Code enforcement rate (estimated)	80	%
Total direct energy savings (building lifetime)	7,209,128	GJ
Total direct GHG savings (building lifetime)	404,432	tonnes CO_2
Lifetime of technology	20	years
Direct Total Energy Savings (GJ)	8,290,665	lifetime GJ
Direct GHG Emission Savings (tCO_2)	465,267	lifetime tonnes CO_2eq

Indirect Emission Reductions

Indirect reductions were estimated by using both bottom-up and top-down methods. Table A11.2 provides an overview of these calculations. The bottom-up estimate assumes a replication factor of 15, which reflects the influence of strengthened energy performance standards and improved codes enforcement (which will affect the entire residential construction sector), both of which should result from project activities, as well as government pressure on the RHP to improve energy performance in the houses it constructs.

The top-down estimate of new building construction assumes that rural construction will continue to increase at the current average rate. However, it assumes that the performance of standardized rural houses will reach the level of EE homes when higher energy performance standards are introduced into building codes and as the market for EE services increases and cost of those homes decreases. The scenario also assumes that continuous increases in gas and electricity tariffs will provide increasing incentives for homebuyers and *existing* homeowners to invest in EE and RE materials and technologies. While the scenario does not include additional savings due to electricity savings from renewable energy, it can be expected that these benefits will increase. Finally, the estimates assume that code compliance for RHP houses will be universal due to the standardized designs and construction oversight, while compliance with the stricter codes will be lower for buildings outside of the project, but higher than at present due to capacity strengthening in codes enforcement.

Table A11.2: Indirect Emissions Estimates for Emission Reductions from EE and Low-Carbon Rural Housing

BOTTOM UP, INDIRECT	
Direct GHG Emission Savings (tCO_2)	60,835
Number of Replications Post-project as Spillover	15
Indirect Bottom-up Emission Savings (tCO_2)	912,525

TOP DOWN, INDIRECT

	Housing Units	Estimated 10-year market penetration rate	Lifetime emissions reduced per unit (tonnes)	Total potential reductions
New rural RHP houses based on standardized EE designs and other rural houses based on standardized designs	33,000	100%	46.94	1,549,179
Other new housing units complying with stricter thermal performance requirements in residential building codes more broadly	1,088,710	20%	46.94	10,220,809
Total Market Potential (lifetime tCO_2 emissions)				11,769,989
Causality factor (GEF level 2 = "modest")				40%
Indirect Top-Down Emission Reductions (tCO_2)				4,707,995

Table A11.3 provides a summary view of total estimated GHG emissions reductions from the project (both direct reductions and indirect reductions) over an assumed lifetime for materials and technologies of 20 years.

Table A11.3: Summary of Total Reductions:

GHG emission reduction summary			
		Cumulative	
	Total	***2016-2021***	***2022-2041***
Direct Total Energy Savings (GJ)	**8,290,665**	943,330	7,347,335
Direct GHG Emission Savings (tCO_2)	**465,267**	52,941	412,326
Indirect Bottom-up Emission Savings (tCO_2)	**912,525**		912,525
Indirect Top-down Emission Savings (tCO_2)	**4,707,996**		4,707,996

Annex 12 UNDP Environmental and Social Impact Assessment (ESIA)

Project Information	
1. Project Title	Market Transformation for Sustainable Rural Housing in Uzbekistan
2. Project Number	PIMS 5392
3. Location (Global/Region/Country)	Uzbekistan

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

QUESTION 1: How Does the Project Integrate the Overarching 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 development process will involve the active participation of both rights-holders (rural families) and duty-bearers (government officials at the local, provincial, and country level). Analysis in the project development process explicitly focused on structural causes of the non-realization of rights; in this case, access to affordable, modern, and comfortable housing with a reliable supply of heat and power. Project activities and outcomes have been developed to support the implementation of national and international commitments in the area of environment and climate change.
- All project components include activities to build the capacities of duty-bearers to fulfill their obligations, including the ability to monitor the performance of buildings and verify savings. The project also includes activities to build the capacity of rights-holders to claim their rights by increasing the awareness of home-owners of energy-efficient and renewable home features and increasing financing options for realizing those features.
- Project monitoring and evaluation will examine project processes and outcomes with a view to human rights standards and principles.

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

- The proposed project will analyze any gender-based differences in access to mortgage financing and in the project outputs and will work to address them. The project will involve an in-country gender expert and will maintain open lines of communication with relevant ministries in this area. Project indicators will be designed to explicitly measure the representation of women in trainings and other project-related activities.

Briefly describe in the space below how the Project mainstreams environmental sustainability

- The project is explicitly designed to mainstream environmental sustainability by introducing more efficient and less resource-intensive housing throughout rural areas in Uzbekistan. Efficient homes will reduce the amount of non-renewable resources consumed in rural areas and – when minimum energy performance standards are introduced for residential buildings – in all new housing constructed in Uzbekistan.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any "Yes" responses).*	**QUESTION 3: What is the level of significance of the potential social and environmental risks?** *Note: Respond to Questions 4 and 5 below before proceeding to Question 6*			**QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?**
Risk Description	***Impact and Probability (1-5)***	***Significance (Low, Moderate, High)***	***Comments***	***Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.***
Risk 1: Generation of Non-Hazardous Construction Waste	I = 2 P = 1	**Moderate**	This issue is addressed through Section 9, Para. 33 of Appendix 1 of Asian Development Bank's Safeguard Policy Statement, which applies to construction undertaken with ADB sectoral loan funds, which are used to underwrite houses constructed under the RHP. Only investments in housing construction are expected to generate waste.	Recipients of financing for EE housing will be required to dispose of the waste generated from construction consistent with the applicable local regulations. Management of waste/construction debris will be part of the assurances/conditions in granting the loan. Project staff will monitor construction activities financed by the project in order to provide an additional layer of monitoring (in addition to existing government and ADB monitoring of RHP housing construction).
Risk 2: Potential to exclude affected stakeholders from fully participating in decisions that may affect them	I = 3 P = 1	**Low**	Inadequate and/or lack of consultation may exclude stakeholders like women committees, citizens' organization, female-headed households, poor rural residents, etc. in providing inputs on issues such as eligibility criteria to access financing, zoning in rural areas, etc.	Stakeholder assessment has been conducted to identify the players to be involved in the Project which includes the government, private sector, home owners, research organizations, NGOs, organizations supporting the dissemination of efficient technologies, and multilateral banks.
Risk 3: Duty-bearers may not have the capacity to meet their obligations in the	I = 3 P = 1	**Low**	Lack of institutional and technical capability to address issues related to	Training of Gosarchitectstroy on MRV, EMIS, software and data usage, and building codes revision, update

Project and rights-holder not have the capacity to claim their rights			providing energy-efficient rural housing (duty bearers) and lack of knowledge and information on access to financing of energy-efficient initiatives in rural housing (rights-holders)	and enforcement to conduct compliance checks will be included in Components 1 and 2. Other agencies involved in planning will have training to strengthen their capacity on zoning and site planning that incorporates efficient use of resources in rural areas.
Risk 4: Potential to reproduce discrimination against women on participation and access to opportunities and benefits	I = 2 P = 1	**Low**	Access to housing finance by women is constrained by lack of awareness and understanding of the financial services, lack of regular income or collateral, and gender stereotypes.	Project components will be designed to incorporate opportunities to enhance women participation not only in capacity building but also on access to financing and employment. A variety of opportunities to enhance women participation such as capacity building on MRV, revision and update of codes for residential buildings, review of land use planning and zoning in rural areas, developing criteria in the beneficiary selection process and in gender-sensitive credit appraisal, identifying mechanisms for consumer credit to home technologies and energy efficient appliances, and connect women borrowers and household members with business and employment opportunities are included. Participating banks in Component 4 will be required to develop women-friendly financial products.
Risk 5: Vulnerability to potential climate change	I = 3 P = 1	**Low**	Events of extreme weather conditions such as typhoon, flooding, etc. may adversely affect the housing units funded by the Project	• Criteria for selecting sites of green mortgages will include areas not prone to occurrence of typhoons, flooding, etc. • Housing units will be designed to be more resource-efficient and climate-resilient • Strict compliance to residential building codes will be a condition for disbursement of funds. • Gosarchitectstroy will monitor and report on construction works and will issue building permits at commissioning stage certifying compliance of each unit with EE or low-carbon design.
Risk 6: Susceptibility to geological hazards such as earthquake	I = 3 P = 1	**Low**	Incidence of earthquake and other geological hazards may affect the integrity of the housing units	• Strict compliance with residential building codes and their seismic performance standards will be a condition for disbursement of funds, and training on codes enforcement provided to Gosarchitectstroy employees will enhance compliance.

	QUESTION 4: What is the overall Project risk categorization?		
	Select one (see SESP for guidance)		**Comments**
	Low Risk	☐	
	Moderate Risk	X	Although the project will not be directly responsible for rural housing and infrastructure construction (with the exception of a single Nearly-Zero Energy pilot house), it will provide financing for the installation of materials and equipment in rural houses and will support community planning related to housing and infrastructure design. The project will involve a series of small-scale investments to new rural housing construction designed to be energy-efficient and climate resilient with minimal social and environmental impacts. Good practice in pollution prevention and abatement and in gender-sensitive participation is already mandated through bilateral agreements pertaining to rural housing construction under the Rural Housing Programme between the Government and ADB. The project will monitor all pilot house construction activities in addition to on-going RHP monitoring.
	High Risk	☐	
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?		
	Check all that apply		**Comments**
	Principle 1: Human Rights	X	Lack of institutional and technical capacity of the executing agency to meet its obligation to the Project Lack of knowledge and information on access to financing of energy-efficient initiatives in rural housing al markets by rights-holders
	Principle 2: Gender Equality and Women's Empowerment	X	May discriminate women in opportunities such as training, determining eligibility criteria for housing finance, etc.
	1. Biodiversity Conservation and Natural Resource Management	☐	
	2. Climate Change Mitigation and Adaptation	x	Vulnerability of housing units to extreme weather conditions

	3. Community Health, Safety and Working Conditions	**X**	Susceptibility of housing units to geologic hazards such as earthquake.
	4. Cultural Heritage	☐	
	5. Displacement and Resettlement	☐	
	6. Indigenous Peoples	☐	
	7. Pollution Prevention and Resource Efficiency	**X**	Generation of waste during construction of housing units

Final Sign Off

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		
Principles 1: Human Rights		**Answer (Yes/No)**
1.	Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2.	Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? [111]	No
3.	Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
4.	Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	Yes
5.	Are there measures or mechanisms in place to respond to local community grievances?	Yes*
6.	Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	Yes
7.	Is there a risk that rights-holders do not have the capacity to claim their rights?	Yes
8.	Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
9.	Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Principle 2: Gender Equality and Women's Empowerment		
1.	Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2.	Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	Yes
3.	Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No N/A
3.	Would the Project potentially limit 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? *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*	No
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below		

[111] Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, 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 people and transsexuals.

*Social and Environmental Standards effective on 1 January 2015 provide guidance on setting-up project-level grievance redress mechanism (see Stakeholder Engagement and Response Mechanisms, paragraphs 12-20, and Monitoring, Reporting and Compliance, paragraphs 22-27.). Quality assurance procedures undertaken as part of the standard project implementation (i.e. regular UNDP monitoring, annual meetings, and independent monitoring) would also provide an opportunity to address grievances.

Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? *For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes*	No
1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including 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?	Yes*
1.3	Does the Project involve 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	Would Project activities pose risks to endangered species?	No
1.5	Would the Project pose a risk of introducing invasive alien species?	No
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	No
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? *For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.*	No
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant[112] greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	Yes
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	No
Standard 3: Community Health, Safety and Working Conditions		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	No

* However, NO infrastructure or investment activities will be undertaken in these areas (or in any others) in the course of the proposed project. Activities will be limited to awareness raising, training, and outreach.

[112] In regards to CO_2, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	No
3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	Yes
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	No
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact 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
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in 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	Is there a risk that the Project would lead to forced evictions?[113]	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect the rights, lands and territories of indigenous peoples (regardless of whether Indigenous Peoples possess the legal titles to such areas)?	No
6.4	Has there been an 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?	No

[113] Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

6.4	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.5	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.6	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.7	Would the Project potentially affect the traditional livelihoods, physical and cultural survival of indigenous peoples?	No
6.8	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in 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?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	Yes
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol*	No
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No

Annex 12a Brief Gender Analysis

Project Title: Market Transformation for Sustainable Rural Housing in Uzbekistan
Project ID Number: GEF Project ID: 6913 UNDP Project ID 5392

I. Introduction

This analysis aims to provide an overview of the gender situation in Uzbekistan, identify gender issues that may be relevant to the project, and to examine potential gender mainstreaming opportunities. The analysis was based on available data from studies conducted by the Government of Uzbekistan, donor agencies, and multilateral development banks. It also includes targeted research supported under the Project Preparation Grant.

II. Energy Efficiency in the Building Sector

Globally, GHG emissions from the building sector have more than doubled since 1970 to reach 9.18 $GtCO_2e$ in 2010, representing 19% of all global GHG emissions. The building sector offers the greatest potential for abatement, as increasing the efficiency of energy use in buildings has an estimated mitigation potential of 3.3-4 $GtCO_2e$/year. Almost 40% of all non-OECD GHG emissions in the buildings sector come from middle-income countries in Eastern Europe and Central Asia.[114]

Uzbekistan's Second National Communication to the UNFCCC[115] identifies the residential building sector as the largest energy consumer in the country (see Figure 2); the sector is responsible for half of all energy-related GHG emissions (approximately 80 million tCO_2e annually). According to UN estimates, the population of Uzbekistan will increase by more than 20% over the next 15 years. In turn, residential energy consumption is projected to rise by over 30% by 2050, posing a threat to national energy security and resulting in an increase in global GHG emissions.[116] The building sector is identified as a priority area for GHG reductions in the national Low-Emission Development Strategy, it is accompanying Road Map on Transition to Low-Emission Development, and in the country's National Communications to the UNFCCC.

Unfortunately, high levels of energy consumption have not translated into high living standards in rural areas. Of the 3.4 million rural households in Uzbekistan, which have an average household size of five, approximately 1.5 million families are in need of improved living conditions.[117]

- Energy supply can be unreliable and intermittent.[118] In several rural regions, households suffer interruptions to their electricity supply of 3-4 hours per day and, in the winter, gas pressure can drop by 70%, causing poor living conditions, health and social problems.[119] In others, where a lack of gas and low electrical voltage rule out those heating options, families may limit the number of rooms that are heated and switch to coal or fuelwood. Observations suggest that, while newer RHP

[114] UNEP (2009). *Buildings and Climate Change: Summary for Decision Makers*: 9.

[115] Government of Uzbekistan (2008). *The Second National Communication of the Republic of Uzbekistan to the UNFCCC*.

[116] UNDP (2014), *Energy Efficiency in Buildings: Untapped Reserves for Uzbekistan Sustainable Development,* http://www.uz.undp.org/content/uzbekistan/en/home/library/environment_energy/energy-efficiency-in-buildings--untapped-reserves-for-uzbekistan.html.

[117] Institute of Social Studies in Uzbekistan (2014).

[118] United Nations in Uzbekistan and the Government of the Republic of Uzbekistan (2015), Uzbekistan UNDAF (2016-2020): 33.

[119] UNDP (2014). *Draft Common Country Assessment*: 114.

houses have better access to gas, availability and pressure tend to decrease the further the settlements are from urban areas.[120] There are also instances where gas from the grid is provided only at fixed intervals during the day for cooking, or where propane cannisters are distributed to meet cooking needs.

- Only 50% of rural housing stock has indoor plumbing, and more households have a natural gas connection (72%) than have a tap water connection.[121] While new houses constructed under the RHP have a tap water connection, they may also be subject to scheduled outages.
- A secondary effect of these deficiencies has been to force some rural populations to switch to coal for heating, which increases rural GHG emissions and reduces local air quality.[122] Other rural households depend to some extent on biogas (from manure) for cooking and heating.[123]
- There is relatively low penetration of air conditioning, even in arid regions with high numbers of cooling degree-days: an average of 18.5 air conditioning units per 100 households in 2011 for the country as a whole, with lower penetration in rural areas.[124]

III. Gender Profile of Uzbekistan

Uzbekistan is the most populous country in Central Asia, with one third of the region's population, amounting to over 31 million people.[125] Two thirds of this population is younger than age 30. Despite steady economic growth in the last decade, the impact of economic growth on improving livelihoods has been inadequate. Poverty rates are higher in rural areas, and while differences in the rates between rural and urban areas decreased from 8% in 2001 to 6.7% in 2013, they still exist.[126] Disparities in economic and social development remain not only between rural and urban areas but also between regions of the country. Poverty in Uzbekistan has distinct rural and regional dimensions: 49.2% of people live in rural areas[127]; 47% of the southern provinces are classified as poor, and 27% as extremely poor. This "development gap" can be explained by the fact that economic growth since 2001 has occurred mainly in regions with strong manufacturing sectors, extractive industries, and modern services.

Women comprise approximately 50.4% of the population, although there are fewer women than men in urban areas (993.0 per thousand) and more in rural areas (1013.5 per thousand). Gender assessments focusing on Uzbekistan generally concur that there are two different trends in the development of gender equality. On one hand, women have relatively high levels of equality in access to education and health outcomes. On the other hand, women face barriers to access to economic opportunities and to political and public participation.[128]

Participation rates for women in the labor force are only 47.9%, as compared to 61.4% for men.[129] However, the share of women's employment has increased slightly from 2000-2013 – latest year for data – from 44%

[120] Rudenko (2015). "Observational Study of Rural Household Energy Use": 4.

[121] Source: Committee on Statistics of the Republic of Uzbekistan. Numbers are for 2013.

[122]For example, a 2013 resolution of the Council of Ministers "On additional measures for providing consumers of the Khorezm region with the fuel and energy resources" created a coal briquette manufacturing facility and delivery company, and the text states that this approach may be used in other regions. Other sources such as Rudenko (2015) also mention coal use for heating.

[123] UN System in Uzbekistan (2014), *Common Country Assessment*.

[124] UNDP (2014). *Energy Efficiency in Buildings: Untapped Reserves for Uzbekistan Sustainable Development:* 47.

[125] Source: State Committee of Statistics of the Republic of Uzbekistan, see at http://www.stat.uz/ru/demograficheskie-dannye

[126] *Millenium Development Goals Report: Uzbekistan 2015*: p. 18.

[127] Ministry of Economy of Uzbekistan (2011).

[128] ADB 2012; CER 2015.

[129] UNDP Country Programme Document 2016-2020 (2015).

to 45.7%.[130] While national gender-differentiated employment statistics are not available, ILO-modeled estimates indicate that female unemployment was approximately 10.8% of the female labor force in 2014 (estimates for male unemployment as a part of the male labor force in 2014 were 10.4%. Both figures represented a slight decline from estimates for the year 2000 (11.0% and 10.7%, respectively).

Women's positions at work vary depending on the size of the business in question: in 2012, women ran 40.4% of small enterprises and 13.7% of microenterprises were run by women.[131] In the private sector as a whole, women occupy 27% of management positions.[132] Mandatory paid maternity leave for women in the work force totals 126 days. However, a lack of formal employment in a number of sectors means that many women are excluded from these maternity benefits, and similar difficulties are also observed with pensions and health benefits.[133]

In political participation, the Government of Uzbekistan introduced a 30% quota for women in party election ballots in 2004; however, women still comprise only 16.5% of members of parliament. This rate does, nonetheless, represent significant improvement from the year immediately following the introduction of quotas, when women's representation in parliament totalled 3.4%. There has also been some progress in participation in political party activities. As a 2015 report notes, " The number of women in political parties has increased. In 2013, women account[ed] for more than 35 % of the four political parties active in Uzbekistan. 'Women Wings' have been created in each political party to help advance the participation of women in politics."[134]

At the local level, women represent approximately 19% of deputies in local representative bodies. [135] At higher levels of the executive and judiciary branches, participation is lower: 6.5% of the Cabinet of Ministers and 13% of the judiciary.[136] Women's participation in other local decision-making bodies is also limited. For example, women form a "small minority" of Water User Association members and an "even smaller" number of leaders, in spite forming a significant percentage of agricultural water users.[137]

Uzbekistan is a signatory of the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). As a signatory, the country files periodic reports to the Convention and most recently filed its fifth periodic report, which it presented to the CEDAW Committee in November 2015. As a UN Woman summary describes, "In the concluding observations on Uzbekistan's report adopted at the CEDAW Committee session, the Committee expressed concern on gender equality and women's empowerment issues in the country, among them with regard to the adoption of the draft 'Law on the guarantees of equal rights and opportunities for men and women,' the status of the national machinery for the advancement of women, women's political and public participation, application of temporary special measures, and the situation with regard to violence against women."[138]

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[130] Center for Economic Research, 2015: 38.

[131] Ibid.: 38.

[132] UN Women 2016. http://eca.unwomen.org/en/where-we-are/uzbekistan. Accessed April 1, 2016.

[133] *An Overview of Uzbekistan's National Social Protection System*, UNDP (2014) as cited in the UNDP Country Programme Document 2016-2020.

[134] CER 2015: 39

[135] "Women and men of Uzbekistan statistical bulletin, 2007-2010", SSC (2014), p. 178. in the UNDP Country Programming Document (2016-2020).

[136]UN Women (2016).

[137] ADB (2014). *Uzbekistan Country Gender Assessment*; xiii.

[138] UN Women (2016).

Under the Millennium Development Goals Initiative, Uzbekistan monitored and reported its progress on MDG3 (Promote Gender Equality and Empower Women). Four institutions were responsible for MDG3 monitoring: The Women's Committee of Uzbekistan, the State Statistics Committee, the Ministry of Public Education, and Ministry of Higher and Secondary Special Education. The final report in 2015 gave a status report for the three related country targets (see Table 1 below).

Table 1: MDG3 Targets and Status as of 2015[139]

Target	Status
1. Eliminate gender inequality in education.	Parity has been maintained in enrolment in primary and secondary general education, and since 2009 in professional colleges. Parity of enrolment in tertiary education however is still lagging behind.
2. Eliminate gender inequality in employment.	Women's employment increased
3. Ensure equal opportunities for women and men in political decision making.	Significant increase

Gender Development Index (GDI)

In 2014, UNDP introduced a new measure into its Human Development Reports, the GDI. This measure is based on the sex-disaggregated Human Development Index, which is defined as a ratio of the female to the male HDI. As such, the GDI is meant to identify gender inequalities in three basic dimensions of human development: health (measured by female and male life expectancy at birth), education (measured by female and male expected years of schooling for children and mean years for adults aged 25 years and older); and command over economic resources (measured by female and male estimated GNI per capita). The 2014 female HDI value for Uzbekistan was 0.640, compared to 0.678 for males, resulting in a GDI value of 0.945.[140] This ranking places Uzbekistan in 114th place out of 188 countries.[141]

Table 2: GDI Inputs for Uzbekistan

Life Expectancy at Birth		Expected Years of Schooling		Mean Years of Schooling		GNI per capita		HDI values		F-M Ratio
Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	GDI Value
71.8	65.0	11.3	11.7	9.5	9.9	3,811	7,342	0.640	0.678	0.945

Source: UNDP 2015.

Social Institutions and Gender Index (SIGI)

[139] Center for Economic Research (2015) *Millenium Development Goals Report Uzbekistan 2015*, Tashkent: CER.

[140] UNDP 2015 HDR Country Notes. http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/UZB.pdf

[141] UN 2016 (http://hdr.undp.org/en/composite/GII). Accessed April 1, 2016.

This measure, which has been developed by the OECD and results in a score between 0 and 1, clusters 108 countries into five levels of discrimination: very low, low, medium, high and very high. In 2014, the SIGI value for Uzbekistan was 0.1475, which placed it in the category of "medium" levels of discrimination.[142]

Global Gender Gap Index (GGGI)

Uzbekistan is not among the 142 countries covered by the World Economic Forum's Global Gender Gap Reports.

Gender Statistics

As the UNDP Country Strategy notes, "Critically, targeted development interventions require reliable data/evidence. Access to official data disaggregated by sex/age needs strengthening across all sectors/levels. Increasing capacities of officials to analyse data in line with international standards requires particular attention, as do legislative/political support and sustainable mechanisms for regular collection of gender statistics."[143] Steps that have been taken to strengthen country capacity in this area includes the establishment of a Gender Statistics Portal for the State Statistical Committee.[144] At 2015 report suggests that this portal "could be complemented with a mechanism for monitoring gender

aspects in the area of employment, health care, education, political and social activity in order to allow for annual monitoring and publication of vital information necessary for policy makers."[145]

IV. National Framework Protecting Women and Promoting Gender Equality

Legal and Administrative Framework

Article 18 under Chapter 5 of the Constitution of Uzbekistan states that "All citizens of the Republic of Uzbekistan shall have equal rights and freedoms, and shall be equal before the law, without discrimination by sex, race, nationality, language, religion, social origin, convictions, individual and social status." There are more than 100 laws and regulatory acts that are designed to protect women's rights. [146]

Policy Framework

The government has not adopted an official policy on Gender Equality and Women's Empowerment.[147] State policies that include women's issues include the national development strategy "Vision-2030" and the "Year of Attention and Care for Elder People" State Programme for 2015.

[142] OECD 2016. http://www.genderindex.org/ranking. Accessed April 1, 2016.

[143] UNDP Country Programme Strategy 2016-2020.

[144] http://gender.stat.uz/

[145] CER 2015.

[146] Permanent Mission of the Government of Uzbekistan to the United Nations: https://www.un.int/uzbekistan/news/studied-and-spread-uzbekistan%E2%80%99s-expertise-women%E2%80%99s-role-civil-society-formation-public

[147] ADB 2014: x.

The government has supported initiatives designed to address gender inequality in the workforce. For example, it has provided a targeted credit line for women-owned start-ups, which provided UZS 491.7 billion (more than USD 170 million) to these businesses. The government also supported the creation of nearly 600,000 home-based jobs to provide opportunities for women in large families.[148]

Institutional Framework

The primary institution addressing women's issues is the Women's Committee of Uzbekistan, which is a non-governmental organization that was established in 1991 and is headed by the Deputy Prime Minister.[149] The Women's Committee includes 208 regional sub-organizations (14 at the province level and 194 at the city or district level) and approximately 42,000 local organizations.

The Women's Committee has a mandate to address women's issues from two Presidential Decrees: №1084 (March 2, 1995) and №3434 (May 25, 2004). There are no ministry-level agencies for women's issues, although there is a State Committee for Family, Motherhood, and Childhood. The primary goal of the Women's Committee is comprehensive support and the defense of women's rights and legal interests; guaranteeing the effectiveness of women's organizations in increasing social civil-legal, and employment participation by women, the level of their legal and economic knowledge, further improvement of their socio-economic status, and fullest degree of meeting women's needs.

Development Cooperation

Four UN international organizations were involved in the Millennium Development Goals effort for MDG3: UN Women, UNDP, UNFPA, and UNESCO. The global mandate now presented by the Sustainable Development Goals (SDGs) includes two SDGs related directly to gender:

- SDG 10: Reduce inequality within and among countries
- SDG 5: Achieve gender equality and empower all women and girls

Under the current UN Development Assistance Framework, (UNDAF), gender is mentioned as a priority under Outcome 1: "…the United Nations System, drawing on its technical expertise, will give special attention to programmes that support women's labour force participation and youth entrepreneurship through entrepreneurship/skills training programmes and volunteerism, among others."

There is still a need to mainstream gender issues into donor-supported activities related to sustainable rural housing: for example, there is no information on women's home ownership or gender issues related to land in the recent UNECE Country Profile on Housing and land Management, and gender issues are not addressed in the most recent National Communication to the UNFCCC. One project that has raised the issue of gender is the UNDP "Supporting Uzbekistan in Transition to a Low-Emission Development Path," which included participatory policy discussions and recommended gender mainstreaming in climate change and low-emission development strategies. In addition, the Sustainable Local Development Self-Assessment Toolkit and Country Programming Handbook that were piloted by UNDP in Central Asia included gender equity issues in strategy discussions.

[148] CER 2015.

[149] www.wcu.uz

The current UNDP Country Programme Document notes that "Improved access of rural households to electricity, water and natural gas will have a positive net impact on the well-being of women and children, therefore UNDP will support women's access and ownership of ecosystem goods and services, as well as community-based, gender-sensitive climate and disaster-resilient solutions." (CPD Outcome 2).

V. Gender and Energy Efficiency, Renewable Energy, and Climate Change in Uzbekistan

As a recent country-level gender assessment notes, "Energy planning and reform projects tend to focus on increasing supplies of electricity or fuel sources, with limited attention to women's energy demands, including the specific needs of rural women, which may differ greatly from those of women in urban areas. However, the use of 'approaches that favor demand-side considerations rather than supply-side energy targets are more likely to positively reflect women's actual needs.'"[150]

One of the most significant issues with a gender dimension is that of power outages. As the ADB notes in its 2014 report, "Energy inefficiencies have serious consequences for economic growth overall. In some regions, power supplies cannot meet the needs of industry, social service provision, and households. Women perform most household chores (cooking, cleaning, and laundry) and are particularly burdened by power interruptions and the inability to use labor-saving appliances. Men are generally responsible for managing the household budget and are more likely to make decisions about the purchase of appliances or to pay energy bills. Energy investments have tended to focus on physical and infrastructure improvements rather than assistance to households to enable them to transition to modern and more efficient forms of energy….Women's engagement in microenterprise and home-based work is seen as an important means of expanding women's economic opportunities, but many women's informal sector activities are energy-intensive and therefore affected by energy availability and price."[151]

Research has indicated that women could benefit greatly from improved energy services in the form of heat and power. These improvements could ease women's workloads, reduce the time spent on household tasks such as cooking and cleaning, and could provide improved comfort and reduced vulnerability during the heating season.

VI. Project-Specific Observations

Gender considerations are already closely monitored under the Rural Housing Programme (RHP) that is under implementation. In the framework of its lending to the Rural Housing Programme, the international lending partner, ADB, has established a 30% quota for loans to women. Data on the gender of the applicant is collected when applications for mortgages are registered, and ADB maintains a database jointly with participating commercial banks of borrowers and co-borrowers with gender-disaggregated data.

During the period from October 2013 to November 2014, 3,247 (27.1%) of the new targeted mortgages under the Rural Housing Programme were provided to women. Previously, from October 2013 to November 2014, 10,206 (31.7%) of mortgage applications under the program were submitted by women from rural areas.[152]

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[150] UNDP gender and energy. p.10 as cited in ADB 2014.

[151] ADB 2014: xiv.

[152] Source: Written correspondence with QQB (June 2015).

It should also be noted that ADB has a gender action plan under implementation that covers houses in the Rural Housing Programme, and the outputs of that plan include gender-enhanced training materials for local governments and informational materials for citizens' associations, which may be consulted in the development of awareness-raising materials (see the Addendum to this Appendix).

Under the RHP, the Council of Ministers of the Republic of Karakalpakstan and the provincial authorities have established permanent territorial commissions to select participants for the housing program, and the Women's Committee is one of the organizations that provides information about the program.

Research reviewed and commissioned during the preparation of the proposed UNDP-GEF project has identified areas where appropriate awareness-raising strategies can take into account the differentiated roles of men and women in purchasing and using household fuels. For example, in a household observation in the Khorezm Region, men were responsible for 97% of heating fuel purchases, while cooking fuels were handled differently (one in five women purchased cooking fuel for their households).[153] Component 4 of the project in particular will also be sensitive to different community networks, both formal and informal, that are used by men and women for disseminating information and raising awareness.[154]

VII. Project Conformity with UNDP and GEF Gender Indicators

GEF Gender Indicators

- This document represents a **gender analysis** as recommended under GEF-6 procedures.
- The **project framework** includes gender-specific activities, such as working to maximize women's participation in capacity-development training in building design. It also includes targets for women's participation, and the project monitoring and evaluation budget supports the collection of gender-disaggregated data.
- In addition, the project will monitor the **share of women and men who are direct project beneficiaries**, and it will also monitor the nature of these benefits.
- Finally, project targets and activities will be monitored in **project reporting**, both in annual reports and in the mid-term evaluation and the terminal evaluation.

UNDP Gender Indicators

- The project concept and proposed activities have been reviewed by a UNDP gender specialist, and the Atlas gender marker for this project is 1.

VIII. Recommendations

Specific action items are included in the proposed Action Plan on the following page. In general, the project should encourage women's participation in all project activities, but it also provides an excellent opportunity to study how improvements in rural housing and energy may affect men and women differently. The project should not only collect gender-disaggregated data, but it should provide this data to other organizations and promote its use in reporting to relevant UN conventions.

[153] Rudenko (2015): 14.

[154] Based on findings in a multi-district observation (UNDP LED Project, 2014: p. 25), the project will also take into consideration the different awareness levels of older and younger women regarding renewable energy options when developing outreach strategies and materials.

Proposed Action Plan

Objective	Action	Indicator	Responsible Institution
Output 1			
Ensure gender-balanced participation in the green mortgage mechanism.	Establish an appropriate target for women homebuyers' participation in the Green Mortgage program at project inception. Monitor levels of participation and adjust outreach strategy as needed.	At least a certain percent (TBD) of green mortgage homebuyers are women.	PIU, participating banks
Output 2			
Support active women's participation in the rural technology needs assessment and in supply chain strengthening activities	Consult with women during the TNA process Monitor the ratio of women in businesses that are involved in market development and supply chain strengthening activities	At least one women's focus group convened during the rural TNA process.	PIU, Gosarchitectstroy
Output 3			
Ensure women's participation in the development of building codes regarding energy performance and housing siting and allocation	Provide administrative support to encourage women's participation in codes development and compliance. Collect gender-disaggregated statistics on training attendance and gender balance at the NIP.	Number of men and women trained on the strengthened building codes. Percentage of women working on building code development and compliance.	PIU, Gosarchitectstroy
Output 4			
Ensure that user outreach, information campaign, and development of communication and dissemination strategy includes women	Ensure that ToRs for the PR contractor require the company to take gender into account during the planning and implementation of its outreach strategies	Number of women participating in sustainable local development planning activities.	PIU, PR contractor, local partners

Objective	Action	Indicator	Responsible Institution
	Liaise with local women's committee organizations when providing training on local energy issues.	Number of women attending training and information sessions.	
Monitoring and Evaluation / Project Management			
Increase understanding of how project benefits may vary by gender	Undertake gender-disaggregated surveys on homeowner satisfaction that cover gendered issues such as cooking and home-based businesses	Gender-disaggregated data are available for both women and men who reside in green mortgage households.	PIU
Raise awareness regarding energy efficiency and sustainable energy	Consult both men and women in the development of promotional materials Collect baseline data on awareness levels among men and women Assess the most appropriate communication channels for information, keeping in mind that they may be different for women and men.	Increase in awareness levels regarding energy efficiency and sustainable energy among both men and women Baseline data available for both men and women Project communication strategy that reflects men's and women's communication channels	PIU
Ensure that the Project Implementation Unit has a solid understanding of gender mainstreaming in project implementation	Offer a training block on gender mainstreaming (with an emphasis on data collection, participation strategies, and gender and energy issues) during the project inception workshop.	Training block on gender mainstreaming in the project inception workshop.	PIU, UNDP

IX. Addendum: ADB Gender Action Plan for the Rural Housing Programme

GENDER ACTION PLAN (GAP)

Objective	Activity	Indicator	Target Group	Responsibility
Overall Coordination and GAP Implementation				
Improve planning and implementation of EGM activities and increase gender analysis skills of partner government agencies and PCBs	a. Recruit Gender Specialist b. Identify gender focal points for each partner agency and form GAD working group c. Finalize GAP[1] in coordination with relevant partner agencies and PCBs d. Conduct gender awareness training for relevant partner agencies and PCBs	(i) Gender Specialist recruited for 2 months (ii) GAD working group formed and quarterly meetings held (iii) GAP finalized and initiated (iv) 2 gender training modules developed and 10 training courses (5 offerings of each of 2 modules) conducted [number of participating agencies/PCBs, number of trainees]	Relevant staff of program partner agencies (including PCBs)	GAD working group and GAP agency/PCB focal points in close coordination with URM Gender Specialist
Output 1: Rural Housing Loans				
1. Improve equitable gender representation in the selection process	a. Set quota for women target groups b. Develop/improve PCB's existing sex-disaggregated database and reporting system.	(i) Sex-disaggregated RHS mortgage applications (ii) Sex-disaggregated database on borrowers/co-borrowers implemented (iii) Sex-disaggregated RHS performance reports prepared and issued	District Selection Committees (including *Mahalla*, NWC District Representatives	PCB Gender Specialists and PCB RHS Staff
2. Identify and inform women target groups for housing finance	a. Identify women's target groups eligible for housing loans based on the selection criteria and score/points system agreed with MOE, PCB, NWC, and *Mahalla*[2] b. Conduct outreach/information dissemination activities in *Mahallas*	(i) Number and types of outreach activities conducted in the rural communities	Women target groups	MOE, District *Hokimiyats, Mahallas*, NWC District Representatives, PCB Staff
3. Improve/ protect women's property/land ownership rights	a. Promote gender-sensitive credit appraisal, loan signing, and property/land registration[3]	(i) Number of co-signed mortgage applications, mortgage agreements, and joint certification of property/land registration	Lawyers (PCBs, Developers, representatives from Lawyer's Association), Women target Groups	PCBs, District *Hokimiyats*/Land Registration Offices

[1] ADB URM Gender Specialist will provide initial guidance.
[2] The selection criteria will be elaborated further in close consultation with QQB, NWC and BWA.
[3] To improve gender equality in cases of divorce/family separation, as well as women's access to MSE finance.

Output 2. Improved Capacity of Local Governments				
1. Improve gender awareness in integrated rural development planning processes	a. Enhance gender awareness in MOE/MOL *hokimiyat* training programs for integrated rural development planning b. Using gender-enhanced training curriculums, deliver training on integrated rural development planning and investment promotion strategies	(i) Number of training programs gender-awareness enhanced (ii) At least 30% of *hokimiyat* staff trained on integrated rural development planning and investment promotion strategies are women	*Hokimiyat* planning staff	MOE/MOL or other relevant training institute trainers
Output 3: Improved Enabling Environment for MSEs				
1. Improve access of women to MSE livelihood opportunities and MSE finance	a. Conduct rapid needs assessment of entrepreneurial/employment profiles of RHS women borrowers, co-borrowers and household members[4] and prepare profile case studies b. Identify and disseminate information on business and job opportunities for women in the project areas[5] c. Conduct business training modules for RHS women beneficiaries/ entrepreneurs[6]	(i) Needs Assessment Report with at least 1 Case Study per province/region (ii) Number of information dissemination and/or training program/s on gender-relevant business and job opportunities undertaken annually (iii) Number of women MSE entrepreneurs participating in business and job opportunity training sessions annually (iv) Number of MSE business plans prepared/registered by women annually (v) Number of new MSEs registered by women annually	Women borrowers (or co-borrowers) and women household members	MOL, PCB Gender Specialists, NWC District Representatives, *Mahallas*, Provincial Chambers of Commerce, BWA, and other relevant NGOs

BWA = Business Women's Association; EGM = Effective Gender Mainstreaming; GAD = Gender and Development; GAP = Gender Action Plan; Mahalla = local community-based organization (CBO); MOE = Ministry of Economy; MOL = Ministry of Labor; MSE = micro and small enterprises; NGO = nongovernment organization; NWC = National Women's Committee; PCB = participating commercial bank; QQB = Qishloq Qurilish Bank; RHS = Rural Housing Scheme; TA = technical assistance; URM = Uzbekistan Resident Mission.

Source: Asian Development Bank.

[4] Needs assessment may be undertaken by NWC/NGO. Home purchase and loan applications will be used to collect baseline information.
[5] A potential counterpart for information dissemination is the "Hunarmand"/Handicraftsmen Association.
[6] In accordance with activities under the MOL employment generation program and the NWC National Action Plan.

Annex 13 Government Statement on EIA

(translation is on following page)

O'ZBEKISTON RESPUBLIKASI
DAVLAT ARXITEKTURA
VA QURILISH
QO'MITASI

ГОСУДАРСТВЕННЫЙ КОМИТЕТ
РЕСПУБЛИКИ УЗБЕКИСТАН
ПО АРХИТЕКТУРЕ И
СТРОИТЕЛЬСТВУ

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№ 3541/10-03 "22" 06 2015

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23 IUN 2015

Представительство Программы Развития ООН в Узбекистане

Касательно: получение заключения ОВОС для строительства индивидуального жилья в Узбекистане.

В ответ на ваш запрос от 22 июня с.г., уведомляем, что для строительства индивидуального жилья в Узбекистане, заключение оценки воздействия на окружающую среду (ОВОС) не требуется.

Первый заместитель председателя **А.Р. Тохтаев**

Исп.: Халходжаев М.Т. тел: 244-48-86
Усманов К.Б. тел: 244-05-85

Unofficial translation

From: **State Committee for Architecture and Construction of the Republic of Uzbekistan**
#3541/10-03 22 June 2015

To: **United Nations Development Programme in Uzbekistan**

Re: Requirements and need of EIA for construction of individual housing in Uzbekistan

To respond to your request submitted on 22 June 2015, we would like to inform you that conducting the Environment Impact Assessment (EIA) for construction of individual housing in Uzbekistan is not required.

First Deputy Chairman

Mr. Azamat TOKHTAEV

Annex 14 Project Linkages with Presidential Resolution PP-2343

The Presidential Resolution PP-2343 "On a Program of Activities to Reduce Energy Intensity [and] the Implementation of Energy-saving Technologies in Branches of the Economy and the Public Sector" was issued on May 5, 2015, and it will remain in effect through 2019. The project directly supports the broad aims of the presidential resolution. Furthermore, Table A13.1 identifies areas where the project will support the **"Roadmap for Increasing Energy Efficiency [and] Implementing Energy-Saving Technologies and Systems in Branches of the Economy and the Social Sphere for 2015-2019,"** which is included as an annex to the resolution.

The roadmap also includes an item to speed up the development of renewable energy resources by passing the current draft Law on Renewable Energy Resources. This project will also support the development of renewable energy resources by financing the use of solar PV units for rural homes. In addition, activities under Sub-Component 2.2, such as the Technology Needs Assessment and supply chain analysis, will also support the development of a market for renewable energy. Finally, activities in Sub-Component 2.2 to identify promising rural technologies, may support approaches such as drip irrigation and biogas, which are also promoted under the roadmap.

Table A13.1: Project Coordination with Presidential Resolution PP-2343

Road Map #	Type of Activity Proposed	Linkages with Project Activities
3.	Review of planning norms and construction codes with a view to energy efficiency; energy metering in new buildings	Sub-Component 3.1 of the project will support the review and revision of the current codes for residential buildings and will strengthen their energy performance requirements. All project-financed buildings will be metered. Sub-Component 3.3 will also strengthen planning norms by introducing considerations such as building orientation and settlement-level energy solutions into planning processes.
5.	Consideration of how investment decisions are made, leading to changes in policies and regulations to make investment decisions more energy efficient; introduction of energy-efficient procurement procedures	By introducing a more energy-efficient design for houses in the RHP (Sub-Component 2.1) and a high-efficiency designation for very efficient buildings (Sub-Component 3.1), the project will allow government programs to set higher energy performance standards in tenders for construction. Support for increased availability of EE materials and technologies and renewable energy technologies such as solar PV units will also make it feasible to pursue "green procurement" policies and should allow these materials to be offered at a lower price as the market develops.
7.	Increase in the volume of energy-efficient lightbulbs; Cabinet of Ministers resolution to localize production of efficient lightbulbs and limit imports of energy-intensive bulbs.	Outreach activities in Component 4 of the project can incorporate information about efficient lighting options into its information and awareness-raising activities, and homebuyers purchasing houses through the green mortgage mechanism in Component 1 will be informed of the benefits of efficient lighting.
15.	Gradual introduction of renewable energy resources	The project will be able to contribute its experience with design prototypes and solar technologies in rural houses

	into prototype rural single-family houses, including solar hot water heating systems and efficient heaters produced domestically.	(Sub-Component 2.1) and can support domestic manufacturers through its supply chain analysis and recommendations (Sub-Component 2.2).
19	Adoption of measures to increase payment compliance and social responsibility among electricity consumers through a review of electricity tariffs, with revisions to take effect in 2018.	The project can play an important role in moderating the effect of tariff increases on rural households, as energy consumption will be smaller in the green mortgage homes, resulting in lower monthly payback. In turn, tariff increases may drive demand for green mortgages as resulting monthly savings increase.
26	Ensure that consumers have access to information about domestically-manufactured energy-efficient technologies by publishing catalogues (starting in 2017).	Sub-Component 2.2 will work with companies to promote and support efficient materials and technologies in the construction sector.
31	Preparation and continuing education for construction engineers and builders in areas including EE in residential and public buildings and renewable energy.	The training components in Components 3 and 4 will support this initiative directly, as they contribute to continuing education.
32	Dissemination of applied R&D in the area of energy-saving technologies through competitions and exhibitions.	Project Component 4 and cross-cutting work on outreach and awareness-raising can directly support information dissemination on efficient technologies.
33	Awareness-raising work in preschools, primary schools, secondary schools, and post-secondary institutions to instill in the next generation the value of energy efficiency and resource savings.	The focus of Component 4 on local approaches to energy savings provides an opportunity to work with local governments, citizens' associations, and schools to distribute information on sustainable energy to children of all ages.

Annex 15 Co-Financing Letters

[Provided separately]