GEF-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND:GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title: Market Transformation for Sustainable Rural Housing in Uzbekistan			
Country(ies):	Uzbekistan	GEF Project ID:[1]	6913
GEF Agency(ies):	UNDP (select) (select)	GEF Agency Project ID:	5392
Other Executing Partner(s):	State Committee on Architecture and Construction of the Republic of Uzbekistan (Gosarchitectstroy)	Submission Date:	28 Oct. 2016
GEF Focal Area (s):	Climate Change	Project Duration (Months)	72
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐	Corporate Program: SGP ☐	
Name of Parent Program	NA	Agency Fee ($)	570,000

A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES[2]

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in $)	
			GEF Project Financing	Co-financing
CCM-1 Program 2	B. Policy, planning and regulatory frameworks foster accelerated low GHG development and emissions mitigation C. Financial mechanisms to support GHG reductions are demonstrated and operationalized	GEFTF	6,000,000	130,665,099
	Total project costs		6,000,000	130,665,099

B. PROJECT DESCRIPTION SUMMARY

Project Objective: To provide Uzbekistan's rural population with improved, affordable and environmentally-friendly living-conditions.

Project Components/ Programs	Financing Type[3]	Project Outcomes	Project Outputs	Trust Fund	(in $)	
					GEF Project Finan-cing	Confirmed Co-financing
1. Green mortgage market mechanism developed and operationalized	Inv	Green mortgage scheme is in place and provides incentives to homebuyers to invest in houses that feature low-carbon design and technologies	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.	GEFTF	3,000,000	124,315,099
	TA	Financial institutions	Financial products reach	GEFTF	500,000	1,100,000

[1] Project ID number remains the same as the assigned PIF number.
[2] When completing Table A, refer to the excerpts on *GEF 6 Results Frameworks for GETF, LDCF and SCCF*.
[3] Financing type can be either investment or technical assistance.

		have capacity to design and operate dedicated financial products for low-carbon housing	at least 1,588 households (7,940 people) in rural areas by the end of the project			
2. Construction and domestic supply chain for low-carbon housing and settlements strengthened	Inv	Efficient designs and domestic supply chains for low-carbon housing and settlements	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	GEFTF	600,000	700,000
	TA	Rural developers, homebuilders, and homeowners have improved access to EE and RE technologies	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	GEFTF	600,000	1,100,000
3. Policy and regulatory framework reformed to enable scale-up of low-carbon housing and settlements	TA	Appropriate policy and regulations, such as minimum-energy performance standards (MEPS), are in place to enable scaled-up construction of lower-carbon housing and settlements 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 MEPS Land-use plans and zoning regulations incorporate efficient resource use and climate considerations	By 2020, at least three strengthened building codes will be in place. 1,500 specialists certified/successfully completing training by the final quarter of the project By the end of the project, at least one siting regulation and one village-level land use plan will promote energy savings and/or climate considerations	GEFTF	500,000	1,100,000
4. Low-Carbon Houses and Settlements marketed and promoted	TA	Rural homebuyers are aware of the benefits and advantages of low-carbon housing	By the end of the project, at least 15 communities take steps to incorporate climate change considerations into decision-making	GEFTF	520,000	1,500,000

		National and sub-national stakeholders in selected regions are aware of and able to incorporate climate considerations into decision-making	By the end of the project, 90% of project participants and 10% of rural homeowners 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.			
				Subtotal		5,720,000	129,815,099
				Project Management Cost (PMC)[4]	GEFTF	280,000	850,000
				Total project costs		6,000,000	130,665,099

C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Please include evidence for co-financing for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Amount ($)
Recipient Government	Gosarchitectstroy*	Grants	9,094,228
		In-kind	550,000
Recipient Government	Qishloq Qurilish Loyiha (Rural Development Agency under the State Committee for Architecture and Construction of the Republic of Uzbekistan (Gosarchitectstroy)	Grants	23,181,366
GEF Agency	UNDP	Grants	300,000
Private Sector	Quishloq Qurilish Bank (QQB – Joint Stock Commercial Rural Development Bank)**	Loans	97,039,505
	Joint Stock Commercial Bank Ipoteka Bank	Loans	
Other	Association "Enterprises of Alternative Fuels and Energy"	In-kind	250,000
Other	Chamber of Commerce and Industry of Uzbekistan	In-kind	150,000
Other	Institute of Energy and Automation under the Academy of Science of the Republic of Uzbekistan	In-kind	50,000
Other	Tashkent State Technical University named after Abu Raikhon Beruni under the Ministry of Higher and Secondary Vocational Education of the Republic of Uzbekistan	In-kind	50,000
Total Co-financing			130,665,099

* Both grant-based and in-kind co-financing committed by the State Committee for Architecture and Construction of the Republic of Uzbekistan (Gosarchitectstroy) are indicated in one letter

[4] For GEF Project Financing up to $2 million, PMC could be up to10% of the subtotal; above $2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

** The co-financing of the banks participating in the Green Mortgage Scheme is presented in one letter from the Joint Stock Commercial Rural Development Bank "Quishloq Qurilish Bank" (QQB). This is because QQB is the bank authorized by the Government of Uzbekistan to administer financing under the National Rural Housing Programme, including management and coordinating the distribution of lending among all participating banks. In its letter QQB confirmed its own interest and availability of co-financing to participate in the GEF-supported Green Mortgage Scheme (in the amount of 86,431,914 mln US$), as well as the availability of financing for the Joint Stock Commercial Bank "IPOTEKA BANK" (in the amount of 10,607,591 US$), which also has interest in participating in the Green Mortgage Scheme.

D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

N/A

E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS[5]

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	*Approximately 4.7 million metric tons*

F. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? No

(If non-grant instruments are used, provide an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF Trust Fund) in Annex D.

[5] Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the *GEF-6 Programming Directions*, will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF[6]

A.1. *Project Description*. Elaborate on: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects; 3) the proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project; 4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing; 5) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 6) innovativeness, sustainability and potential for scaling up.

Global environmental problems, root causes and barriers

While there have been no changes in alignment, additional information and analysis on root causes and barriers is now provided in Section 1 of the accompanying UNDP project document.

The baseline scenario and associated baseline projects

The description of the baseline scenario has been expanded in order to document recent developments in the growth of the rural mortgage market. In 2015, growth in the Rural Housing Programme (RHP) mortgage program was sustained, and demand for mortgages remained strong with the number of rural houses financed with RHP mortgages totalling 12,000 for the year. Furthermore, the Government and ADB signed a loan agereement for the third tranche of the RHP loan totalling USD 100 million (at a rate of LIBOR plus 0.5% with a 3-year grace period for repayment) on August 20, 2015.[7] 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 Qishloq Qurilish Bank (QQB).[8] 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 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.[9] Participating banks have been consulted regarding projected mortgage demand during the development of the concept and the project documentation, and they have all stated that they forecast continued, strong demand for RHP mortgages during the project lifetime.[10]

As part of the policy baseline, the UNDP project document now includes information on Presidential Decree 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" (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. 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 of the accompanying UNDP project document provides a detailed list of linkages between PP-2343 and the project.

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[6] For questions A.1 –A.7 in Part II, if there are no changes since PIF , no need to respond, please enter "NA" after the respective question.

[7] A copy of the loan agreement is available at the following link: http://www.adb.org/projects/44318-026/main

[8] Ibid.

[9] Source: http://www.anons.uz/article/economics/16885/

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

Proposed alternative scenario

A full description of the alternative scenario, including a detailed description of outcomes and outputs, can be found in the accompanying UNDP project document in "**Section II. Strategy**" under the heading "Description of Project Outputs and Activities."

The overall focus and approach of the project remains the same. 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 energy-efficient and low-carbon housing. This outcome will be supported and enabled by three complementary outcomes, which relate to 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). Supporting information for these components is also provided in **Annex 10**, a technical annex that discusses design, technology, and regulatory issues in the rural housing sector of Uzbekistan in more detail.

Summary of modifications: While the overall alternative scenario remains the same, consultations and research during the preparation of the project identified several opportunities that are now reflected in the project activities and outputs. For example, stakeholders expressed interest in a financing mechanism that would support solar PV units in both new and existing houses –activities supporting the development of this mechanism are now included under Component 1. That component also now describes the pilot areas that have been agreed upon with the Government where pilot green mortgage houses will be constructed. Additional information on green mortgage mechanisms can be found in **Annex 2** of the accompanying project document. Supporting information on efficient and low-carbon technologies and on the regulations to be strengthened is provided in **Annex 10**: Technical Annex.

Component 2 will now take advantage of the construction and testing of efficient housing that has already taken place, so outputs related to the EE and Low-Carbon houses will be related to finalizing the designs, refining the available options and researching the local availability and suitability of various technologies and design practices for specific heating zones and climatic-construction zones in Uzbekistan. These zones are described in **Annex 10** of the accompanying UNDP project document. Design development and testing is now limited to a Nearly-Zero Energy house, which will prioritize low-cost approaches (Output 2.1).

In Component 3, work on strengthening building codes will now include strengthening community master plans and norms and standards regulating the allocation and orientation of housing (Output 3.3). This step will promote upstream integration of sustainable energy planning into rural communities at the planning stage. In Component 4, project preparation consultations identified the need for training in energy management for local government. These activities are now included under Output 4.2. Finally, Monitoring & Evaluation now has its own component to improve transparency, and monitoring plans will include issues relevant to energy efficiency projects (these issues are now descrbied in Part 3 of the **Implementing Arrangements** section of the UNDP project document), and it will directly measure occupant satisfaction (see **Section III.** Project Results Framework).

Incremental cost reasoning and co-financing

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.

Funding from the GEF is to be used to overcome systemic barriers to implementing low-carbon rurual housing in Uzbekistan, specifically those barriers related to affordability of low-cabon rural housing, the inadequacy of the existing

regulatory framework, and capacity and awareness constraints in the building and planning sector. *In the absence of GEF support, none of the proposed incremental project activities will be implemented; i.e., the National Rural Housing Program will construct an estimated 79,000 rural houses over the proposed project period. However, these units will comply only with relatively weak energy performance requirements, and they will consume a higher amount of energy (and incur higher energy costs for their owners) over their lifetimes. Significant potential energy savings (and corresponding GHG emission reductions) will go unrealized.*

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** of the accompanying UNDP project document. The figures included in total project co-financing are a conservative estimate of investment financing for three reasons:

1. Total stated commitments of the participating banks, as the co-financing letters in Annex 15 of the UNDP project document indicate, are much larger than the direct investment indicated in Table 9, 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.[11]
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 over those four years. These credits will be provided by current mortgage lenders and an additional three participating banks.

Global Environmental Benefits

Estimates of project-related greenhouse gas emission reductions are provided in **Annex 11** of the accompanying UNDP project document, the GEF GHG spreadsheets, and the GEF Climate Change Tracking Tool.

Direct emission reductions will result from two project activities: 1) the construction of 1,509 energy-efficient rural houses and 79 low-carbon houses (which use a similar design but also include a solar PV unit to generate electricity); and 2) the introduction of building codes that mandate improved thermal performance in residential buildings. The construction of the pilot houses is expected to save 138,117 GJ of energy during the project period, and a total of 1,057,057 GJ over the 20-year building lifetimes. The resulting direct emission reductions total 7,768 tCO_2eq during project implementation, or 59,462 tCO_2eq over a 20-year building lifetimes. The application of stricter thermal performance standards to all RHP houses in 2019 and 2020 will result in energy savings of 801,133 GJ during the projet implementation period and 7,209,128 GJ of savings over the 20-year building lifetimes, with a resulting decrease of 44,944 tCO_2eq during the project implementation period and 404,432 tCO_2eq over the 20-year building lifetimes. As a result, direct emission reductions from project activities total 463,894 tCO_2eq.

Indirect reductions were estimated by using 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 on new rural construction, other new residential construction, and to a lesser extent, to existing construction. This estimate also takes into account government pressure on the RHP to improve energy performance in the houses it constructs and the project activities related to nearly-zero energy housing. The resulting bottom-up estimate totals 891,925 tCO_2eq.

[11] The total of USD 1,531,100,000 reflects the combined commitments of QQB (USD 1,435,200,000) and Ipoteka Bank (USD 95,900,000) through 2016. These amounts are stated in the co-financing letters in Annex 15.

The *top-down estimate* of new building construction assumes that rural construction will continue to increase and that the performance of "standard" buildings in the RHP 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. The resulting top-down estimate totals 4,707,996 tCO_2eq.

Innovativeness, sustainability and potential for scaling up

Innovativeness

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 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.

The green mortgage concept has been used to target and support rural development in only one country to date: Mexico (green mortgage programs are summarized in Annex 2 of the Project Document). While housing finance is beginning to develop in the region, there is no consideration of the life-cycle costs and energy use of the housing that is financed. Furthermore, the combination of this incentive and a mechanism to finance solar PV units in both new and existing houses, combined with territorial planning to optimize residential energy supply, represents a highly innovative step at the global level.

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 through a small number of stand-alone pilot efforts, 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, and the knowledge products developed will be valuable for many countries.

Sustainability

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.

Potential for scaling-up

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.

By partnering with the Government of Uzbekistan, which will finance and construct approximately **33,000 rural homes during 2019-2020 alone**, elements of the financial mechanism and the design and technological innovations can be disseminated on a very large scale during the project lifetime.

Beyond the direct project replication measures, the potential for scaling up 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. Sectoral loans and housing programs are present in a number of countries in Eastern Europe and Central Asia, but there are no programs that internalize energy savings into loan costs.

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 only new home-buyers. This financing mechanism is also not present in neighboring countries, although it could be applicable.

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, planned construction in the rural housing sub-sector by itself will represent significant scaling up for more efficient designs and technologies. In addition, 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.

A.2. Child Project? If this is a child project under a program, describe how the components contribute to the overall program impact. NA

A.3. *Stakeholders*. Identify key stakeholders and elaborate on how the key stakeholders engagement is incorporated in the preparation and implementation of the project. Do they include civil society organizations (yes ☒/no ☐)? and indigenous peoples (yes ☐/no ☒)?[12]

Information on project stakeholders is provided in Table A.1.3 below. Additional information can be found in the accompanying UNDP project document: **Annex 5** documents stakeholder consultations that have been held regarding the project, and **Annex 3** describes the project's complementarity with other donor-funded projects in Uzbekistan.

[12] *As per the GEF-6 Corporate Results Framework in the GEF Programming Directions and GEF-6 Gender Core Indicators in the Gender Equality Action Plan, provide information on these specific indicators on stakeholders (including civil society organization and indigenous peoples) and gender.*

Table A.3.1: Project Stakeholder Overview

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"; 3) Its leading role in energy efficiency in buildings under the National Programme for Increasing Energy Efficiency in Buildings; and 4) 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

Type of Stakeholder	Name of Stakeholder	Relevance to Project, Role in Preparation, and Role in Implementation
		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 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

Type of Stakeholder	Name of Stakeholder	Relevance to Project, Role in Preparation, and Role in Implementation
		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).
	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 Organizations 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 in-kind 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

Type of Stakeholder	Name of Stakeholder	Relevance to Project, Role in Preparation, and Role in Implementation
		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.
	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-	WHO recently concluded a 5-year, $550,000 project, “Climate Change Adaptation to Protect Human Health,” in partnership with

Type of Stakeholder	Name of Stakeholder	Relevance to Project, Role in Preparation, and Role in Implementation
	SCCF	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).

A.4. Gender Equality and Women's Empowerment. Elaborate on how gender equality and women's empowerment issues are mainstreamed into the project implementation and monitoring, taking into account the differences, needs, roles and priorities of women and men. In addition, 1) did the project conduct a gender analysis during project preparation (yes ☒ /no☐)?; 2) did the project incorporate a gender responsive project results framework, including sex-disaggregated indicators (yes ☒ /no☐)?; and 3) what is the share of women and men direct beneficiaries (women 50.4%, men 49.6%)? [13]

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.[14] 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.

More generally, a 2014 Country Gender Assessment found that "integration of gender issues remains limited in hard sectors such as infrastructure development, transport, and energy."[15] 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.[16] There is also some evidence that 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.[17] 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.

[13] The project defines beneficiaries as occupants of new pilot houses and/or participants in training and awareness-raising. The estimate of the ratio of women and men is based on 2015 government estimates of the ratio of women to men in all rural areas of Uzbekistan. In the regions participating in the green mortgage pilot, this ratio varies from 49.2% women (Bukhara Region) to 50.3% women (Ferghana Region). Lending data collected under the RHP by the Asian Development Bank do not indicate any statistically significant difference in the ratio of women to men per household in RHP households as opposed to other rural households. Source: State Committee of the Republic of Uzbekistan on Statistics (2015).

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

[15] ADB (2014): 7.

[16] Ibid: 41.

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

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).[18] 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.[19] 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.

Additional information can be found in the brief gender analysis that is provided in **Annex 12a** of the accompanying UNDP project document. The project concept and proposed activities have been reviewed by a UNDP gender specialist, and the Atlas gender marker for this project is 1.

A.5 Risk. Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation (table format acceptable):

Because the project involves a new financial mechanism for the market in Uzbekistan, its UNDP assigned risk rating is "high." As the supportive political environment for energy efficiency and the reliance on proven technologies for rural housing planned for the project, the primary project risks identified are financial. Specific project risks are listed in **Table A.5.1** below, together with appropriate mitigation measures.

Table A.5.1: Project Risk Overview

Description	Rating	Explanation
Financial Risk	High	The financial risk associated with the green mortgage scheme is rated as high because of the risks inherent in introducing an innovative financing mechanism into the Uzbek market and the complexities of administering the scheme. Due to current interest rates and loan terms, there is also a moderate risk that demand more mortgages might not increase at projected rates; however, it should be noted that the mortgage market has been growing steadily in the last 6 years (See Table 4 in the accompanying UNDP Project Document) 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	Moderate	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

[18] Rudenko (2015): 14.

[19] 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.

		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-Moderate	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, ongoing 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 ongoing 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 addressed 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	Moderate	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 **Annexes 12 and 12a** of the UNDP project document. 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.

This project has completed the UNDP social and environmental screening procedure, which can be found in **Annex 12** of the UNDP project document. 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.

The project does not require an environmental impact assessment, and a government letter confirming this is provided in **Annex 13** of the accompanying UNDP project document.

A.6. Institutional Arrangement and Coordination. Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

The project will be implemented following UNDP's National Implementation Modality (NIM)[20], 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)[21].

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

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

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

services are provided through UNDP's global network of country, regional, and 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[22] and the NIM Guidelines[23], 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.

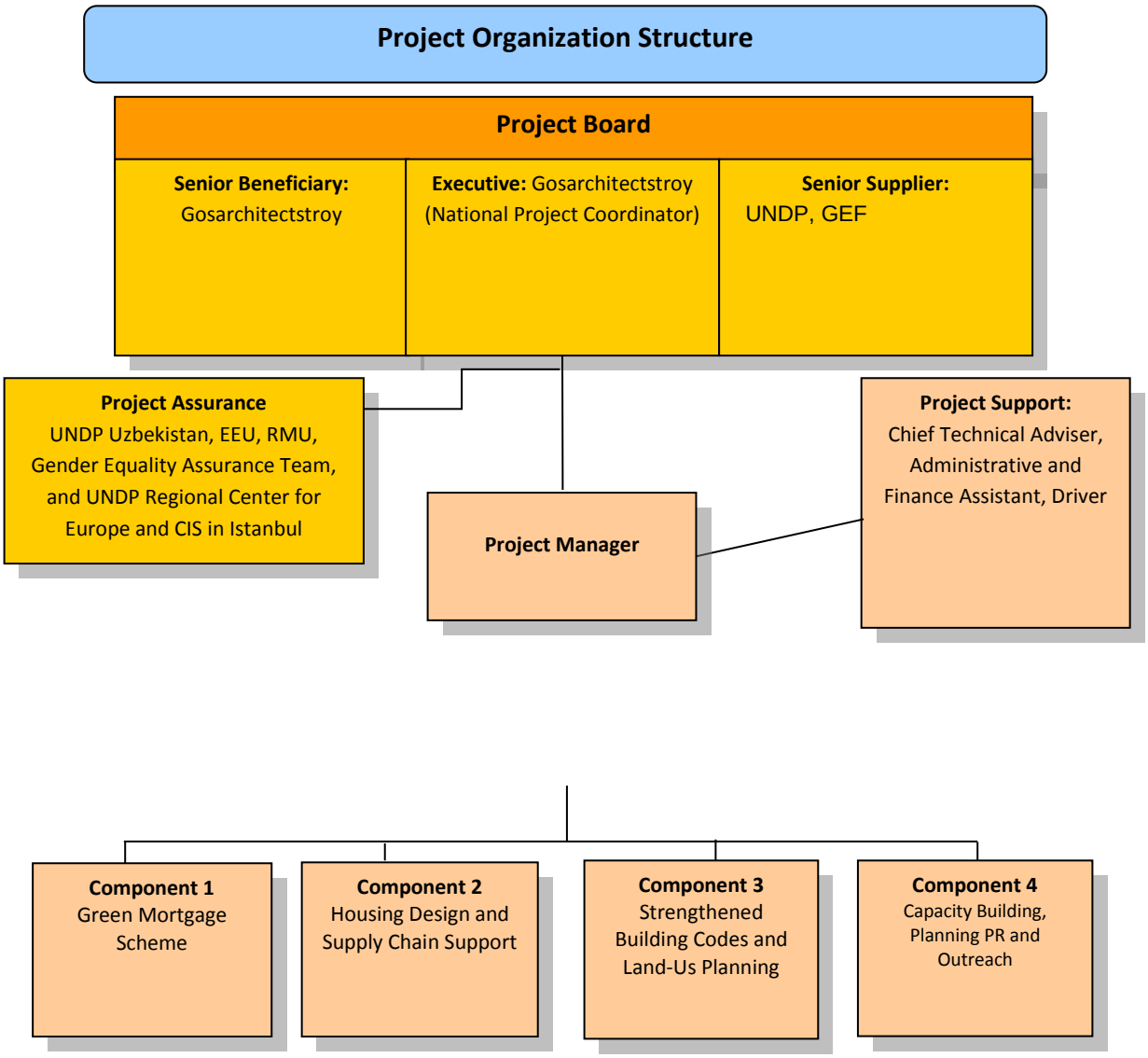
In line with NIM Guidelines and cash transfer modalities, procurement under the project will be undertaken by either Responsible Party (overall PIU at Gosarchitectstroy or the Green Mortgage PIU) or by UNDP under the 'Direct Agency Implementation' modality. Wherever procurement is carried out by the 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 recorded or direct payments already made, these should be rejected at any point up to the issuance and signature of the Combined Delivery Report."

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

[23] 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

Figure A.6.1 below describes the relationships between the various stakeholders and the staffing arrangements for the project team.

Figure A.6.1: Project Organisation Structure



Planned coordination with other relevant GEF-financed projects (and other donor-funded projects more generally) is summarized in **Annex 3** of the accompanying UNDP Project Document.

Additional Information not well elaborated at PIF Stage:

A.7 *Benefits.* Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

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. 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.[24]

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).[25]
- 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).

Overall, the project is 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. These benefits will directly translate into global environmental benefits in the form of a lower carbon development trajectory.

A.8 *Knowledge Management*. Elaborate on the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user-friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

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.

[24] 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.

[25] State Committee on Statistics (2013).

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.[26] The project will also leverage existing channels of distribution (radio, regional television, exhibitions, civil society offices, and schools and 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 A.8.1 provides an overview of some of the knowledge products that will be developed by the project.

Table A.8.1: Sample Project Knowledge Products by Project 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 Knowledge and awareness survey on SLD concepts for policy-makers and UNDP
M&E and Project Management	Inception Report, Mid-Term Evaluation Report, and Terminal Evaluation Report Technical reports on the energy peformance and indoor climate of the pilot buildings Reports on beneficiary satisfaction Reports on training participation by gender and gender involvement in other activities 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

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

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.

B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

B.1 *Consistency with National Priorities.* Describe the consistency of the project with national strategies and plans or reports and assessements under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.:

The current draft version of **Vision 2030**, which will serve as the primary development plan for Uzbekistan, directly acknowledges environmental challenges to development and the need to manage social and environmental risks that can be concurrent with rapid economic development. As the draft background paper on environmental sustainability for the plan states, "It is clear that whatever growth strategy is chosen, it will have to envisage fundamental changes to the way in which energy and water are used and managed." The environmental elements of the Vision include the reduction of energy intensity across all sectors and the introduction of institutional reforms to ensure sustainable resource management.

The **National Low-Emission Development Strategy of Uzbekistan** has been developed with technical assistance from UNDP and is under consideration by the Ministry of Economy and other relevant government agencies. The Strategy 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); and 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). The most recent is 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" (5 May 2015). This document declares several priorities to generate energy savings 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. The document also endorses an inter-agency program of activities to reduce energy consumption in various sectors and targets for reducing energy intensity. In the area of renewable energy resources, there is a 2013 Presidential Decree "On measures to further increase use of renewable energy sources" and corresponding Resolution of the Cabinet of Ministers.

Finally, the **Cabinet of Ministers** of the Government of Uzbekistan recently passed an important **resolution** related to home appliances. In Resolution No. 86 dated April 9, 2015, Article 171 mandates the introduction of a national system of labeling and certification of energy use in new home appliances (on the basis of an A-G rating system) 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 power 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**[27] (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)[28] 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.

C. DESCRIBE THE BUDGETED M &E PLAN:

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.

[27] 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
[28] 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

- 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.

In terms of financial monitoring, the project team will provide UNDP with **certified periodic financial statements**, and with 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 overall Monitoring & Evaluation plan is provided in Table C.1 below.

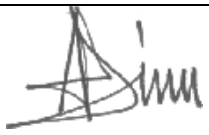
Table C.1: Monitoring and Evaluation Plan

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	

PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)

A. GEF Agency(ies) certification

This request has been prepared in accordance with GEF policies[29] and procedures and meets the GEF criteria for CEO endorsement under GEF-6.

Agency Coordinator, Agency Name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Adriana Dinu UNDP-GEF Executive Coordinator		October 28, 2016	Marcel Alers, PTA, EITT	+1-212-906-6199)	marcel.alers@undp.org

[29] GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF

ANNEX A: PROJECT RESULTS FRAMEWORK

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**

GEF Project Objective[30]: To provide Uzbekistan's rural population with improved, affordable and environmentally-friendly living conditions	Total Lifetime Direct and Indirect GHG Emissions Avoided (tCO_2eq)* *	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 introduction of stricter building codes Total direct GHG emissions avoided: 35,291 tCO_2eq over an assumed technology and materials lifetime of 20 years	Direct GHG emissions avoided: 52,712 tCO_2eq[31] 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	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

[30] *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.

[31] 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).

	Lifetime energy saved (expressed in GJ)*	In the absence of the project, fossil fuel consumption will continue to grow in the rural housing sector due to increases in the size of the housing stock in spite of selected energy efficiency gains.[32]	By the mid-term, the project achieves energy savings of at least 32,376 GJ from direct investement, code strengthening, and other measures.	The project achieves energy savings of at least 939,250 GJ during the project lifetime, or 8,266,185 GJ over the of 20-year building lifetimes from direct investment, code strengthening and other measures facilitated by the project.	See above	See above
	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 more than 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.

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

	Number of new development partnerships with funding for improved energy efficiency and/or sustainable energy solutions targeting underserved communities/groups and women[**]	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 underserved communities/groups and women.	Project activities will result in at least one new development partnership for improved EE and/or sustainable energy solutions targeting underserved communities/groups and women.	Project documentation Reporting on co-financing	Rural housing will remain a priority for the government and for other development partners.
	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	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

				control group. Economic, social, health, and local environmental benefits of the EE and Low-Carbon houses will be assessed (using gender-differentiated data).		
GEF Outcome 1[33]: 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

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

GEF Outcome 2: Efficient designs and domestic supply chains are available for low-carbon housing and settlements	Level of dissemination of prototype EE and low-carbon designs for rural houses and settlements; i.e., the number of rural households with access to houses with EE/RE technologies	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
	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 buildings, or, to a lesser extent, multi-family residential buildings in urban areas	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[34].	Database of EE and RE companies (previous UNDP project records)	Companies will be interested in expanding their sales to a new market segment
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	By the end of the project, there will be near-universal compliance for new residential buildings constructed in	Audits on RHP houses conducted by the project team.	Increased enforcement and training will lead to improved compliance.

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

			codes	Uzbekistan.	Enforcement documentation from Gosarchitectstroy	
	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 target for women's participation TBD at project inception]	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
	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-	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	By the end of the project, at least 15 communities take steps to incorporate climate change considerations into decision-making [target for women's	Project monitoring and evaluation reports	Energy management at the sub-national level will remain a policy priority for the government.

		making	decision-making [target for women's participation TBD at project inception].	participation TBD at project inception].		
	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 benefits of EE and low-carbon houses.[35] 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 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.

[35] 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.

				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.
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.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Comments (by Party)	Location in PIF	Response and Action
STAP (08 May 2015)		
PIF states on page 11: "The design for both EE and low-carbon houses will be prepared and tested under Component 2." There are several issues that should be answered during project preparation including: How long will this testing take?; Who will do it?; What exactly will be measured? Or will it be modelled?; How many houses will be assessed to determine statistically significant results?; What will determine whether or not the improved design parameters have been met?; If metrics are to be based on energy consumption (kWh/m2/yr) by families living in the new design homes compared with other designs, will allowances be made for whether it is an above or below average, hot or cold, or wet or dry year?; Will the costs for each individual item (insulation, solar water heater etc) be compared in terms of $/t CO2 avoided?	p. 11	During the project preparation period, the project team held a series of discussions with the implementing agency to develop a more detailed work plan for activities under Component 2. Because of the work that has been done to date on the preparation and testing of designs that use EE and renewable materials and technologies, the project will focus on more on fine-tuning the existing proposed designs and ensuring that they are appropriate for the climatic conditions in the pilot regions. In addition, the project will design and construct a low-cost Nearly-Zero energy house, as this demonstration may help to influence the government stakeholders' thinking about large energy savings that could be possible within the budget constraints of government construction programs. The UNDP Project Results and Resources Framework lists the energy audits that will be conducted in order to ascertain the performance of the pilot houses in relation to control houses; i.e., other RHP-funded houses constructed in similar conditions with similar occupant profiles. In order to ascertain whether there is a statistically significant difference between energy performance and occupant satisfaction, audits and surveys will be conducted for at least 90 houses in a pool of 1,000 houses (500 pilot houses, 500 control houses), for a P value of .90 and confidence interval of 10%. Currently, the costs for each individual item in the EE and Low-Carbon pilot houses are compared in terms of $/t$CO_2$ avoided in Table A10.1 of *Annex 10: Technical Annex* in the UNDP Project Document. These houses are illustrative, and it is expected that site orientation may also contribute to savings in the pilot houses that are built. It should be noted that construction will begin in 2018 pending the finalization of both the financial mechanism and the rural house designs. It is very possible that the work conducted under Component 2 may allow these houses to be more

		efficient at a more competitive cost than the current estimates presented in the project documentation. Allowances will be made for variations in average temperature and precipitation as appropriate. Most importantly, the evaluation of building performance will control for heating and cooling degree-days. Tables A10.2 and A10.3 in *Annex 10* also provide information on inter-regional variations in climate that will affect energy performance and code compliance in the residential buildings constructed. *Action:* In the UNDP Project Document, *Annex 10* now provides itemized costs of individual items that comprise the EE and RE measures for the houses to be financed under the green mortgage mechanism; it also provides additional information on climatic conditions and building performance. Clarification on the design and testing of the pilot houses is now provided under Component 2 in the *Description of Project Outputs and Activities* in this RCE and the UNDP Project Document (beginning on page 26). Activities related to designing and piloting a low-cost, Near-Zero Energy House have been added, as has support for the development of an energy label or certificate for Near-Zero Energy houses.
Table 6 shows the extra costs to the homeowner using green mortgage scheme, but where are the cost savings presented that are the estimates for reduced the energy bills? What are the likely payback periods for the additional costs? These factors are important to consider in the longer term assuming that subsidies for green mortgage should be reduced over time not only because of deceasing costs of EE construction and equipment, but also because low-carbon housing will reduce consumer energy consumption costs.	Table 6 (p. 12)	Cost savings in the form of reduced energy bills are now presented in the project document for three different tariff development scenarios. At present, tariffs are increasing at the rate of 15% annually for natural gas and 16% annually for electricity. Research under the project preparation period also studied consumer willingness to invest in EE measures under various tariff scenarios (see the response to Council Member comments below). The investigation into the root causes of low efficiency during the project preparation period found that even when monthly energy savings were relatively high, investments were blocked by barriers ranging from lack of awareness (on the part of both policymakers and home buyers); relatively low tariffs (although these figures are increasing, and a 2014 report found that costs for housing and municipal utility services exceeded 10% of residential incomes and were

		"beyond the affordability threshold"[36]); regulatory barriers (regulations that establish mortgage conditions currently cap the total amount of money that can be loaned for a mortgage, which effectively blocks credit for EE investments), and consumer creditworthiness (stakeholder consultations indicated that the current down-payment is the maximum that homebuyers can afford – there are homebuyers who obtain bridge loans for down payments – and there is no extra money for up-front EE investments that cannot be covered by the mortgage). Efficient housing reduces consumer costs *and* government costs (in the form of reduced energy subsidies). *Action:* Research and modeling done on payback periods under the PPG under a green mortgage scheme is now included under *Annex 2: Additional Background Information on the Green Mortgage Mechanism* under the section "Analysis of the Potential for Green Mortgages in Uzbekistan." The description of awareness-raising activities and knowledge products has been expanded in the *Project Benefits* section of the UNDP Project Document (see Table 11). Efficient housing will reduce consumer costs in the form of monthly energy bills *and* government costs in the form of reduced expenditures for residential heat and power subsidies. These two stakeholder groups will need ongoing, customized outreach in order to understand these savings and champion them.
Based on section 1.5, energy savings will be from reduced electricity demand. This assumes the baseline is that present houses are heated only with electricity. The intention is for government to build 2000 km more of gas pipeline in rural areas. Will this enable all the new houses in this project to be connected or will some use compressed gas delivered in bottles? Will the water be heated electrically or by gas? What sort of heating appliances are now used, electrical resistance, heat pumps, gas boilers? The choice available can make a significant difference to the analysis. Are there no wood stoves used today? Could pellet stoves be a future option where gas does not reach?	Section 1.5 (pp. 17-18)	The use of the W and kWh units does not imply the use of electricity for heating; the conversion to kWh is done so that a single unit of measurement can be used to express the total household energy consumption (heat and power). Additional information is now provided in *Annex 10: Technical Annex*. The project assumes that baseline houses will be heated with gas from the gas grid. This has been the practice for RHP houses to date, and the government is planning future construction in the same way.

[36] UNDP (2014). *Energy Efficiency in Buildings: Untapped Reserves for Uzbekistan Sustainable Development: Summary*: p. 7.

		A solar hot water heater was tested in the pilot house referenced in Annex 10, which was described in an associated report ("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). Electric hot water heaters are assumed in the EE and Low-Carbon houses instead of gas because of operational and safety issues when there are grid fluctuations in gas pressure. At present, the RHP houses use gas from the grid for heating and cooking. Heating methods are more varied among existing rural housing stock. For example, in the Sukhandarya Region, household energy strategies can include fuel wood from old fruit trees or Russian olive trees (*Elaeagnus angustifolia*) for heating and cotton stems and fruit tree twigs for cooking. In the Khorezm Region and the Republic of Karakalpakstan, however, there are some households that use fuel wood, dried manure, or charcoal for heating and LPG or cotton stems for cooking. (Source: Rudenko, I. *Observational Study of Rural Household Energy Use*. Tashkent: 2015). Pellet stoves, mentioned by the reviewer, were not considered because of the lack of forested area in Uzbekistan. In terms of biofuels, the Second National Communication of the Republic of Uzbekistan to the UNFCCC listed the following two possibilities among RES options judged to be most suitable for in-country conditions: "Biogas installations for heat generation running on utilization of vegetative waste from agricultural produce (stems of cotton, straw) and organic waste (droppings of cattle) substituting boilers running on natural gas and mazut" and "Biogas installations for heat and power generation running on collection of methane at installations on cleaning of waste water and at dumps of solid household waste" (SNC 2008: p. 145). These options will be considered during the community-level planning and

		energy management activities under Component 4 of the project. *Action:* In Annex 10: Technical Annex, Table A10.2 now describes specified energy consumption for heat and cooling (in W/m^2), and Table A10.3 provides energy consumption norms for current residential building codes (in $kWh/m^2/year$). Increased attention to settlement planning in Component 4 , including the addition of energy management activities, now allows for a potential increase in options for community-level energy supply that would incorporate RES.
STAP recommends considering several factors in low carbon home designs including building orientation, larger south facing windows, thermal storage, double glazing, white roofs, and etc. The project document could provide cost-benefit analysis for different materials and technologies to understand how the priority will be given to the range of energy saving technologies. Are the houses likely to be located in areas of high solar radiation such that solar systems will be viable? Has the alternative water heating option of an air-to-water heat pump been considered? It could be more viable for some situations so a comparison should be made. The time of using the hot water affects the viability of a solar water heating system so behavioural issues need to be considered and these are not mentioned in the proposal. Regarding solar water heaters, solar PV and other renewable energy systems, a useful report would be IEA "Cities Towns and Renewable Energy" (http://www.iea.org/publications/freepublications/publication/Cities2009.pdf) that covers appropriate policies in detail and gives examples of the "Merton Rule" and Barcelona's solar water heater ordinance. In addition the IPCC 5th Assessment Report â€“ Mitigation in Chapter 9 provides detailed analysis of energy efficiency options for buildings. The weak part of the project is the selection of options in the house design so this reference may help in terms of costs and potentials (http://mitigation2014.org/report/publication/). IEA also has a series of publications on energy efficiency standards in buildings that would be useful.	NA	The criteria in developing initial designs for the green mortgage pilot houses was cost-effectiveness tempered by institutional, budgetary, and cultural considerations. *Annex 10: Technical Annex* discusses some of the specific technologies that were considered and lists those that were selected for the illustrative versions of the EE and LC houses. In the first 18 months of the project, activities under Component 2 will propose final designs for the EE and LC houses that are sensitive to local climatic conditions and country-specific considerations. Several reports commissioned under the project preparation period emphasized the varying design needs and opportunities for housing construction in Uzbekistan's regions, which have a direct impact on heating and cooling needs. In fact, Uzbekistan is divided into three heating zones (by degree-day) and three "construction-climatic" zones (ranging from Zone I, which includes regions with extreme summer temperatures, to Zone III, which experiences extreme winter conditions. These zones are described in more detail in Annex 10. Another second factor in the selection of suitable design components is the availability of construction materials, which has a direct impact on costs. Availability, cost, and market preferences

		for the same materials (e.g. mineral wool insulation, autoclave aerated concrete panels, and others) varies widely across regions. Regarding specific technologies: *Houses are located in areas with sufficient solar radiation for renewable options, including the solar PV systems that are proposed for the Low-Carbon house. *Air-to-water heat pumps were not considered in the illustrative EE and Low-Carbon houses because of availability, cost (including installation cost), and O&M issues. *Both the EE and Low-Carbon houses feature efficiency measures around the installation of windows. Window size is currently considered to be part of the state standard design, and it is not clear whether this can be changed without a high-level decision. *Roof color is another area where the standard design precludes the use of white roofs. However, it may be possible to use paint with reflective pigment, which is currently available on the market in Uzbekistan, in the standard roof color *Some factors will depend on consumer tastes. In addition to energy security issues, there is some indication that the Low-Carbon house may be desirable to homebuyers because the PV unit is a visible sign of additional expenditure (as opposed to attic or socle insulation). It is important to note that over time, the availability and cost of both materials and equipment are expected to change, and the project team will be responsible for responding to these changing market conditions as the pilot houses are constructed in 2018-2020. Component 2 will support this testing (particularly elements that may be regionally appropriate), and Component 4 will also explore community-level sustainable energy solutions for the new housing developments. *Action:* A number of international studies,

		including those referenced here, have been consulted. A description of the sample pilot measures and their cost and performance is now provided in *Annex 10: Technical Annex* of the UNDP Project Document. In addition, the project document and project design now utilize research and observations conducted during the project preparation period to identify in-country institutional and cultural issues related to domestic energy use in rural Uzbekistan (as partially noted above). Activities in Component 2 related to the technology needs assessment will also support the identification of technology needs in rural communities and the market development necessary to promote technology transfer. In Component 3, building orientation and energy considerations will be included in APOT (territorial planning document), while Component 4 activities will include the demonstration of these innovations.
There is no mention of the rebound effect in the PIF whereby householders who save money from heating or cooling costs tend to use more energy to heat/cool more rooms in the house than was the original case. Is this to be considered during project implementation?	NA	Yes, the rebound effect will be considered during project implementation. 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."[37] The project will assess the rebound effect through its monitoring and evaluation design, in which pilot green mortgage houses are compared with a control group of standard RHP houses in the same region with similar access to gas and power. In addition to modeling data on the thermal performance of the houses and energy consumption, the project will monitor energy expenditures and indoor

[37] IEA (2014) *Capturing the Benefits of Energy Efficiency*: 23.

		climate indicators (temperature and humidity) in addition to occupant satisfaction. This monitoring will allow the project to identify consumption patterns such as the rebound effect. *Action:* The rebound effect is acknowledged in the Project Document, and the M&E plan for the project will allow the project team to assess the extent of this effect in the green mortgage houses.
Uzbekistan's national electrification rate is 94.4%, but electrical supply to rural areas is "unreliable and of low quality". There are often power blackouts that last many hours per day. World Bank (2013) report: Uzbekistan Energy/Power Sector Issues Note suggests that changes in hydrology, air temperature and extreme events will likely affect national energy security in the long term, with expected measurable impacts on energy supply in 2030. It is assumed that these changes will impact particularly on rural areas with unreliable energy supply manifested potentially through higher frequency of black-out periods, higher energy tariffs, increases in electricity demand and changes in consumption patterns. Cooling loads are expected to increase as the climate warms, which will drive increases in electricity consumption. However, heating requirements in winter months are expected to decrease due to rising temperatures. Project proponents are recommended to consider these climate impacts on the choice of building designs and EE and RE technologies suggesting low-carbon rural housing more preferable and viable option than EE housing in the longer term.	NA	Consultations during the project preparation period indicated that an advantage of the Low Carbon house offered under the green mortgage mechanism would be a secure supply of energy during power blackouts. *Action:* Component 1 will pilot the use of solar PV in the Low Carbon houses, and it will also explore the possibility of a stand-alone solar PV financing mechanism for existing RHP houses and other rural houses. Building-sector technologies are being considered for adaptability and climate resilience. There is ample evidence that energy efficiency measures reduce vulnerability in periods of extreme heat and cold and that landscaping may also reduce vulnerability to extreme weather events. *Action:* Component 2 will look specifically at regional climate conditions (and project future conditions) that may influence the optimum set of materials and technologies used in the pilot houses. It will also consider materials, designs, and techniques to increase natural cooling in the pilot houses. Furthermore, Component 4 will address territorial planning, and will consider village-level renewable energy solutions that could also improve energy security and address increasing demand for electricity.
GEF Council (Work Program Council Comments, pp.39-40)		
<u>Germany requests that the following requirements are taken into account during the design of the final project proposal:</u> Homeowners as target group**:** the proposal suggests that homeowners may not specifically be interested in low-carbon housing options since these models cost more up- front and fossil fuel energy sources are cheap. Final project documents should include estimates of how much money homeowners will save in the long-run with regard to energy usage.	NA	A market survey conducted in Uzbekistan in 2015 by the Center for Economic Research found that 33% of households would be interested in investing in energy efficiency measures if the price of natural gas increased by 15-20% (current annual increases total approximately 15%). If increases are higher – 30-50% -- the number of households willing to invest in

		energy efficiency measures rises to 72%. Furthermore, consultations during project preparation indicated that the Low-Carbon House, although slightly more expensive than the Energy Efficient House, would be desirable to homebuyers for reasons of energy security (i.e. a steady supply power even during blackouts for grid-connected houses). *Action:* Annex 2 of the UNDP Project Document now provides life cycle cost estimates for both the EE and the Low Carbon house under three tariff scenarios with estimates of long-run savings.
Interest rate and Sustainability of the Program: the 7% interest rate - despite government subsidy - seems quite high. In addition, the down-payment requirement of 40% of the cost of the house is quite high. What evidence exists that 87,000 families are in a financial position to participate in this program?		The 7% interest rate is much lower than the standard commercial interest rate for mortgages, which is 16-18%. At present, terms for the down-payment requirement have been improved substantially, and the down payment is currently 22.9% of the cost of the houses. Consultations carried out during the project preparation period with all of the participating commercial banks included their strong affirmation that demand for the RHP loans continues to outweigh supply, and that their market research indicates that these loans will be placed at the level anticipated by the Government and the Asian Development Bank. Action: Updated information on the terms and conditions of the RHP lending program are now provided in the *Description of Project Outputs and Activities* in the RCE and the Project Document (beginning on page 26) and in *Annex 2: Additional Background Information on the Green Mortgage Mechanism* in the Project Document.
NAMA: has consideration been giving to leveraging international support for the upscaling of the program - and potentially offsetting the high interest rate - through the submission of a NAMA project? Could a loan-insurance mechanism be applied to incentivize the lending banks to provide more favorable terms?		A Nationally-Appropriate Mitigation Activity (NAMA) Support Project Outline for efficient housing sector was developed and endorsed by the Government in 2013-2014, and it has been submitted twice to the NAMA Facility, but it has not received financing. *Action:* This information is now noted in the UNDP project document on page 20.

		Loan insurance is already included in the cost of the mortgage. As lending terms and conditions are set by government decree, there is not a ready mechanism to incentivize banks by altering these terms. *Action:* Additional information on lending terms and conditions is now provided in Component 1 of the *Description of Project Outputs and Activities* in this RCE and the Project Document (beginning on page 26) and in the UNDP project document under *Annex 2: Additional Background Information on the Green Mortgage Mechanism*.

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: $100,000			
Project Preparation Activities Implemented	***GEF/LDCF/SCCF Amount ($)***		
	Budgeted Amount	***Amount Spent To date***	***Amount Committed***
Conducting baseline studies	82,350	82,350	0
Conducting studies to address opportunities/risks identified during an environmental and social screening of the project proposal			
Conducting detailed analysis of the existing national, regional (sub-national) and local development strategies/ programmes/plans and appropriate policy and regulations			
Identification of specific project sites for intervention	4,550	1,115	3,435
Printing/publishing: one pager, strategic paper, infographics, banner and other printing materials	1,330	0	1,330
Conducting Validation workshop (organization services, translation, design/ layout of ProDoc, etc.)	11,050	0	11,050
Other activities/ Miscellaneous expenses	720	550	170
Total	**100,000**	**84,015**	**15,985**

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used**) NA**