GREEN CLIMATE FUND

AMENDMENT AND RESTATEMENT
amending and restating the

FUNDED ACTIVITY AGREEMENT
(GRANTS)

between

UNITED NATIONS DEVELOPMENT PROGRAMME

and

GREEN CLIMATE FUND

for

FUNDED ACTIVITY: FP010
"De-risking and scaling up investment in energy efficient building retrofits"

Dated 24 January 2024

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Amendment and Restatement of the Funded Activity Agreement

This amendment and restatement agreement amending and restating the Funded Activity Agreement (the "**Amendment**") is made and entered into on 24 January 2024 between:

UNITED NATIONS DEVELOPMENT PROGRAMME, an international organization established by the General Assembly of the United Nations pursuant to its resolution 2029(XX) of 22 November 1965 and having its registered office at One UN Plaza, New York, New York 10017, United States of America (the "**Accredited Entity**" or "**UNDP**"); and

The **GREEN CLIMATE FUND,** designated as an operating entity of the financial mechanism under Article 11 of the United Nations Framework Convention on Climate Change and established pursuant to the Governing Instrument for the Green Climate Fund, approved by the COP at its seventeenth session on 11 December 2011 and is annexed to Decision 3/CP.17, possessing juridical personality in order to operate effectively internationally, having such legal capacity as is necessary for the exercise of its functions and the protection of its interests and having its headquarters at Songdo, Incheon, Republic of Korea ("**GCF**"),

(each a "**Party**" and together the "**Parties**").

WHEREAS

(A) On 7 June 2017, the Parties entered into a Funded Activity Agreement for Funded Activity: FP010 "De-risking and scaling up investment in energy efficient building retrofits" which became effective on 30 June 2017 and was amended pursuant to Side Letter No. 1 dated 16 May 2023 (the "**FAA**"), which sets forth the agreed terms for implementation of the Funded Activity;

(B) Based on delays in implementation caused in part by the COVID-19 pandemic, decrease in the amount and change in the source of co-financing, revisions to the relevant retrofitted building targets, and a rescreening of the Project in accordance with the Accredited Entity's safeguards policies, the Accredited Entity requested some changes in the Project implementation plans and a change to the Environmental and Social Risk Category, as described in the restructuring paper, which is attached to this Amendment as Annex 1 ("**Restructuring Paper**") and a further request to update the responsible parties and update the name of the Executing Entity (collectively, the "**Restructuring Proposal**");

(C) The modifications set out in the Restructuring Proposal were agreed by the Fund and, in the case of the change in the ESS categorisation, by the Board by its decision B.36/09, subject to the conditions set out in this Amendment; and

(D) Pursuant to the above, the Parties hereto now wish to amend and restate the FAA to reflect the approved modifications to the Funded Activity set out in the Restructuring Proposal.

NOW THEREFORE the Parties hereto agree as follows:

Clause 1. General Provisions

1.01 Wherever used in this Amendment, the terms defined in the FAA shall have the same meanings as set forth therein, unless modified herein or the context otherwise requires. In addition, the following definitions apply in this Amendment:

"**Amended and Restated FAA**" means the FAA as amended and restated pursuant to this Amendment in the form set out in Annex 2;

"**Amendment Effective Date**" means the date on which the Fund dispatches a notice to the Accredited Entity in accordance with Clause 3.03 of this Amendment.

1.02 The Accredited Entity hereby represents, as of the date of execution and effectiveness of this Amendment, that:

(a) Any factual information provided as part of the Restructuring Proposal is to the best of its knowledge true and accurate in all material respects as at the date it was provided or as at the date (if any) at which it was stated;

(b) The financial projections, if any, contained in the Restructuring Proposal or in this Amendment will be or were, as the case may be, prepared on the basis of recent historical information and on the basis of the reasonable assumptions;

(c) To the best knowledge, nothing has occurred or been omitted from the Restructuring Proposal and no information has been given or withheld that results in the information contained in the Restructuring Proposal being untrue or misleading in any material respect; and

(d) No additional financing is required to implement the changes in the Restructuring Proposal.

Clause 2. Amendment and Restatement of the FAA

2.01 Pursuant to Clause 14.06 of the FAA, the Parties hereby agree that with effect from the Amendment Effective Date, the FAA shall be amended and restated in the form set out in Annex 2 so that the rights and obligations of the parties to the Amended and Restated FAA shall, on and from that date, be governed by and construed in accordance with the provisions of the Amended and Restated FAA.

Clause 3. Miscellaneous

3.01 The Accredited Entity hereby confirms that the representations and warranties provided by the Accredited Entity under clause 18.01 of the AMA and Clause 9.01 of the FAA are true and accurate as of the date of execution and effectiveness of this Amendment.

3.02 The provisions in Clauses 12 (*Applicable Law; Dispute Resolution*) and 14 (*Miscellaneous*) of the FAA shall apply to this Amendment, *mutatis mutandis*, as if set out in full herein.

3.03 ***Effectiveness.*** Except for this Clause 3 which shall enter into force on the date of this Amendment, this Amendment (and the Amended and Restated FAA) shall come into effect on the date upon which the Fund dispatches to the Accredited Entity a notice of its acceptance, in a form and substance satisfactory to the Fund, of the following evidence:

(a) A duly authorized and executed copy of this Amendment; and

(b) A certificate, issued by the most senior legal officer of the Accredited Entity, certifying that this Amendment and the Amended and Restated FAA have been duly authorized or ratified by all necessary corporate actions of the Accredited Entity, this Amendment has been duly executed and delivered on behalf of the Accredited Entity, and this Amendment and the Amended and Restated FAA are legally binding and enforceable upon, the Accredited Entity in accordance with their terms.

3.04 ***Termination for Failure to Become Effective.*** This Amendment and the FAA shall terminate if this Amendment has not entered into effect by the date which falls ninety (90) calendar days after the date of execution of this Amendment, unless the Fund, after consideration of the reasons for the delay and following consultations with the Accredited Entity, establishes a later date for the purpose of Clause 3.03. The Fund shall promptly notify the Accredited Entity of such later date. In addition, the GCF shall not make any additional Disbursements of GCF Proceeds under the FAA until this Amendment becomes effective.

3.05 This Amendment may be executed in several counterparts, each of which shall be an original.

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IN WITNESS WHEREOF the Parties hereto, acting through their representatives thereunto duly authorized, have caused this Amendment to be signed in their respective names as of the day and year first above written and to be delivered at the principal office of the Fund.

UNITED NATIONS DEVELOPMENT PROGRAMME

By _____ Date 17-01-2024
Pradeep Kurukulasuriya
Executive Coordinator and Director of Environmental Finance, Vertical Funds Programming Support, Oversight and Compliance Unit

GREEN CLIMATE FUND
On behalf of Ms. Mafalda Duarte – Executive Director
(in line with the delegation of signature DPM/2023/205)

By _____ Date 24 January 2024
Lillian Macharia
Director, Division of Portfolio Management

ANNEXES TO AMENDMENT NO.1

Annex 1. Restructuring Paper

GREEN CLIMATE FUND

Restructuring Proposal

UNDP – Armenia - De-risking and Scaling-up Investment in Energy Efficient Building Retrofits in Armenia

7 June 2023

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Note to accredited entities on the use of the Restructuring Proposal template
• Sections **A, B, C, D** and **E** of the Restructuring Proposal require detailed inputs from the accredited entity. • The total number of pages for the Restructuring Proposal (excluding annexes) is expected not to exceed 50.

Please submit the completed form to:

OPM@gcfund.org

Please use the following name convention for the file name:
"[FP]-[Agency Short Name]-[Date]-[Serial Number]"

A.1. PROJECT/PROGRAMME MILESTONES			
Date of Board Approval	30/06/2016		
Date of FAA Signature	07/06/2017		
Date of FAA Effectiveness	30/06/2017		
Closing Date	30/06/2022	Proposed Revised Closing Date	30/06/2025
Project Completion date	30/06/2023	Proposed Revised completion date	30/06/2026
Number of Disbursements to date	3		
Total disbursed Amounts (by instrument- loans, grants, equity)	Loans – n/a Grants – 5,933,000 USD (as of February 2023) Equity – n/a		
Undisbursed amounts (by instrument- loans, grants, equity)	Loans – n/a Grants – 14,067,000 USD (as of February 2023) Equity – n/a		
Cancelled amounts (broken down by instrument - loans, grants, equity)	Loans – n/a Grants – 0 Equity – n/a	Cancellation date	N/A

A.2. SUMMARY OF PROPOSED CHANGES TO THE PROJECT/PROGRAMME (max 300 words)

Through this restructuring proposal the accredited entity is requesting to accommodate the following changes:

(1) A 36-month extension of the original Completion Date and Closing Date (30 June 2022 to 30 June 2025; and 30 June 2023 to 30 June 2026 respectively to be reflected in the Funded Activity Agreement (FAA));

The project is seeking this extension because of the delays triggered by the COVID-19 pandemic and the escalation of military hostilities between Armenia and Azerbaijan since September 2020. Both factors forced the temporary realignment of the political and budget priorities of national and regional government entities during more than 2 years, while also creating challenges for the companies providing building renovation services. The Government of Armenia now considers this project extension to be of the highest priority, given the remaining needs for energy efficient building retrofits across the country and confirmed its full commitment to the project. The project has developed a comprehensive plan for expedited implementation for the extended period. This plan involves materialization of new sources of co-financing for pre-identified building renovation projects, to which the project will contribute by providing technical assistance and incremental GCF-funded support for energy efficiency (EE) renovation investments. The 36-month extension request is based on the workplan of UNDP and its partners to carry out the retrofitting work. This extension request was originally submitted to GCF on 20 October 2022.

(2) Revision of the retrofitted building targets (updated logic framework, update to section C.2. of the Funding Proposal (FP))

While the overall strategy, objective, and targeted reduction of GHG emissions is projected to remain unchanged following the original GHG calculation methodology (from 2017 as approved by GCF for the funding proposal). In case

the targeted reduction of GHG emissions is recalculated based on updated emission factor, the decrease in impact will be not more than 5%[1].

The project has revised some of its output-level plans. These revisions include firstly changes to the number of building EE renovation projects in various building types. Such revision was first carried out for the Refocus Analysis (submitted to GCF in 2020), with a shift toward increasing the share of public buildings (in line with the recommendations from the GCF independent Technical Advisory Panel) and involving residential multi-apartment buildings (MABs) outside Yerevan. Please see section F.1 for the proposed changes with respect to building targets, replacing the *expected impact* targets in section C.2 of the approved funding proposal.

(3) **Decrease of the co-financing from the European Investment Bank (EIB): co-financing to be reduced from USD 100 million to USD 14.8 million (in the logframe; revision to FAA schedule 2A, updated co-financing section B.2 in FP.); and accommodation of new co-finance sources (Schedule 2 of the FAA)**

These changes were triggered by the partial non-materialization of the EIB loan for energy efficient retrofits originally foreseen to materialize during the project implementation period. UNDP proactively sought other co-financing arrangements/partnerships to fill in the financial gap and reach project impact targets to the extent possible. (The new co-finance sources have been identified to fill in the financing gap which occurred in early stages of the project implementation due to EIB loan not being signed for the amount originally foreseen at the project design. The GCF Secretariat was informed about most of these new sources of co-finance in the Refocus Analysis in 2020, while some additional partnerships were agreed more recently, while discussing the need for accelerated delivery of the project for the extended 3-year period. For details, please refer to section B.2 for the new proposed overall financing structure, including past and future financial projections, B.4, B.5 and the annex 5 which provides a comprehensive list of agreements in place or to be entered to during the 3-year extension period. All newly identified co-financiers underwent UNDP Partner Capacity Assessment (PCAT). Following UNDP rule, micro-assessments (Harmonized Approach to Cash Transfers) were also conducted for the relevant co-financiers. Signature of the relevant responsible party/letter of agreements is a condition for UNDP to disburse the GCF grant to such Responsible Parties for energy efficient retrofits in line with the implementation timelines, in line with UNDP rules.

UNDP disbursements would be guided by the following conditions – UNDP will submit to GCF Secretariat the following:

- For disbursement 5: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 8 mln[2] for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 5 will be applied.
- For disbursement 6: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 12.3 mln[3] for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 6 will be applied.
- For disbursement 7: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 5.7 mln[4] for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 7 will be applied.

[1] Original target as per FP is 1,388,332 tCO2/ 20 years, which was calculated using the GHG emission factor of 0.436 (as approved by GCF in 2017 in the Funding Proposal). As per GCF request, this target figure was recalculated using the GHG emission factor of 0.390 and is now equal to 1,176,690 tCO2/ 20 years. The emission reductions assessed based on ex-ante and the ex-post data are equal to 1,118,289 tCO2/ 20 years, and the difference between the target and the GHG ER makes not more than 5%.

2 70 per cent of co-finance required to flow for component 4 alongside GCF grant under that specific tranche.

3 ibid

4 ibid

Note: as per UNDP rules and procedures[5], UNDP will be signing letters of agreements/responsible party agreements only upon transfer of GCF grant to UNDP account.

(4) Addition of new responsible parties (revision to implementation arrangement as described in the FP and the FAA).

In addition to the Municipality of Yerevan, new responsible parties are proposed to be added to co-execute/receive parts of the GCF grant for EE retrofit activities. For more details, please see section C.2. The proposed new responsible parties are:

This constitutes a positive change as the project expanded its partnerships in the context of the implementation of the project, under the umbrella and execution leadership of the Ministry of Nature Protection (the executing entity). There is no change with respect to the role or capacities of the executing entity, and neither any adverse effect of addition of these new partners under the project umbrella.

(5) Updated disbursement schedule to account for reduction of the 4th disbursement and change in implementation times (revision to FAA schedule 2B).

For the extended period, in line with the revised implementation plan, a revision of the estimates for the disbursement requests is proposed. See section B.4 for the new estimates and updated disbursement schedule.

(6) Amendment of the condition 9.02 (e) of the FAA: submission of the exit strategy, to be submitted to GCF not 60 months but 84 months after the FAA effectiveness in view of the proposed extension.

In the light of requesting 36 months project extension, the finalization of the exit strategy is proposed to take place 12 months prior to the project completion This follows the same logic as the approved funding proposal, which proposed to submit a final exit strategy one year before the completion date (and not at the project design stage). This will allow for the exit strategy to reflect all the latest/achieved progress during the proposed extended period.

(7) Change in the ESS classification from C (no/low risk) to B (medium risk) as per the GCF safeguards policy

In view of the new co-financiers and partners for the 3-year extended period and following the most recent re-screening of the project, the project is proposed to be recategorized from C (no/low risk) to B (medium risk) as per the GCF safeguards standards. (This corresponds to the category of moderate risk as per the UNDP safeguards policy, and medium risk as per the GCF safeguards policy, as confirmed during the re-accreditation of UNDP). Please refer to annex 2 for the most recent safeguards screening, which identified moderate risks related to asbestos and air pollution stemming from the energy efficient retrofits in project Output 4.1. The Environmental and Social Management Framework and Plan (ESMF/P) is presented in annex 3[6]. The ESMF/P has been translated into local language and disclosed on UNDP and other websites/in an accessible location

[5] As per Financial Regulations 20.01, 20.03(b), Commitments must be made based on available financial allocations. Allocations for programmatic activities are based on contributions paid in advance of the allocation (Regulation 5.07(b), see also Financial Rule 107.02)

[6] GCF comments were received by UNDP on ESMF on 16 May – the expected resubmission of ESMF for GCF review and redisclosure on website is 23 May 2023.

as per the UNDP disclosure guidance and the GCF information disclosure policy in English and an official local language.] Please see also section F.3 and annex 4.

A.3. Is there any deviation from the AMA required for this project? Yes ☐ No ☒ If yes, please elaborate and justify why	
Change in Implementing/Executing Agency	*Yes [ ] No [x]*
Change in Project's Objectives	*Yes [ ] No [x]*
Change in Results Framework	*Yes [x] No [ ]*
Change in Expected Impact	*Yes [x] No [ ]*
Change in Legal Terms, Conditions and Covenants	*Yes [x] No []*
Change in Closing Date(s)	*Yes [x] No [ ]*
Change in Completion Date	*Yes [x] No [ ]*
Change in Technical/Project Design	*Yes [ ] No [x]*
Change in Scope	*Yes [ ] No [x]*
Any Cancellations Proposed	*Yes [ ] No [x]*
Change to Financing Plan	*Yes [x] No [ ]*
Changes to GCF Financing Amount	*Yes [ ] No [x]*
Change in Disbursement Arrangements	*Yes [x] No [ ]*
Reallocation between Disbursement Categories	*Yes [ ] No [x]*
Change in Disbursement Estimates	*Yes [x] No [ ]*
Change to Components and Cost	*Yes [ ] No [x]*
Change in Institutional Arrangements	*Yes [x] No [ ]*
Change in Financial Management	*Yes [ ] No [x]*
Change in Procurement	*Yes [ ] No [x]*
Change in Implementation Schedule	*Yes [x] No [ ]*
Change of ESS category	*Yes [x] No [ ]*
Other Changes to Safeguards	*Yes [ ] No [x]*
Change in Economic and Financial Analysis	*Yes [ ] No [x]*
Change in Technical Analysis	*Yes [ ] No [x]*
Change in Environmental and Social Analysis	*Yes [x] No []*
Change in Risk Analysis	*Yes [x] No [ ]*
Other Change(s)	*Yes [ ] No [x]*

B.1. ANY CHANGES TO STRATEGIC CONTEXT, FINANCIAL MARKET AND/OR PROJECT BASELINE SINCE APPROVAL THAT HAVE INFLUENCED THE CHANGE? YES ☒ NO ☐ IF YES, PLEASE ELABORATE

The Refocus Analysis prepared and submitted to the GCF in November 2020 takes note of the following changes in context.

- In spring 2018, there was a "velvet revolution" leading to a change in the Government of Armenia. The new Government, wary of expanding its external debt burdens, decided not to accept a $86M sovereign loan from the European Investment Bank (EIB), which was originally foreseen as a major source of co-financing of EE retrofits supported by this project (and listed in the Funded Activity Agreement).
- In the absence of this loan, the Government of Armenia agreed (after facilitation effort by UNDP and the project) to mobilize and apply new co-financing for EE building retrofits from the budget under the State Subvention Programme, which supports infrastructure investment outside of Yerevan.
- In addition, UNDP identified other co-financing sources/partners, including other EIB loans (sub-sovereign) and contributions from municipalities and local administrations.

Since the preparation of the Refocus Analysis, the following additional changes to the strategic context of the project have emerged.

- The COVID and escalation of military conflict between Armenia and Azerbaijan has shifted the priorities of Government and local administration from investment in energy efficient buildings retrofits towards other sectors. Linked to the COVID outbreak, the priorities were shifted towards construction of new healthcare facilities, enlarging/updating existing ones to be able to accommodate the large number of patients with COVID. Right after the ceasefire - construction of new safe roads, shelters for spontaneous arrivals as well as overall safety related works were prioritized over the general projects, including those on energy efficiency.
- Since the end of 2021, the Government of Armenia and its various line ministries, as well as the Municipality of Yerevan, started re-prioritizing renovation of public buildings. There is therefore a strong, diverse potential pipeline of renovation projects to which the project sees an opportunity to apply GCF support for cost-effective incremental EE upgrades.

Please see Section B.3. for an elaboration of how the project proposes to adjust its activities in response to these changes.

The Operations Manual(s) were developed (as set forth by the FAA) for 4 types of buildings to ensure establishing rules and regulations for the processes and procedures for the implementation of the activities under the project. Despite external factors such as political changes, conflict escalation and COVID - the types of buildings as well as eligible energy efficiency measures remain the same. All 4 Operations Manuals, which were approved by GCF in autumn 2020, remain applicable.

B.2. CHANGES TO PROJECT / PROGRAMME OBJECTIVE AGAINST BASELINE? YES ☐ NO ☒ IF YES, PLEASE ELABORATE

N/A

B.3. CHANGES TO PROJECT/PROGRAMME DESCRIPTION YES ☐ NO ☒ IF YES, PLEASE ELABORATE

There is no change to the project activity description (C.3 of the funding proposal), as approved by GCF. The nature of all project activities has not changed, and neither the description of the individual activities. The only changes are relevant to the co-financing arrangements and targets (which are described in subsequent sections.) Please refer to section H.1 for the updated logic framework.

B.4. CHANGES TO FINANCIAL ELEMENTS OF THE PROJECT/PROGRAMME

As of December 2022, the project has executed around US $4.541 million of the investment portion of its GCF budget in support of building energy retrofits. Since the FAA Schedule 2 was not revised following the refocus analysis in 2020, in the context of the co-financiers listed there, the materialized co-finance as of December 2022 amounts to 28.64 million USD, while the co-finance materialization outside of the FAA is 55.5 million USD so far (not captured formally as it is not reflected in Schedule 2).

There is no change with respect to the allocation of GCF proceeds under different outputs of the project. With respect to co-finance, as per Schedule 2 of the FAA (please see annex 5), the following has changed since the project start (see also section B.5):

- Increased amount of co-financing from the Municipality of Yerevan for the renovation of a projected 50 public buildings and 10 MABs in Yerevan from 8 million USD to 57 million USD, in total covering the proposed extended period of the project (project outputs 3 and 4). Energy Efficiency co-financing from the partner will be ~ 17.1mln USD

- New co-financier: Asian Development Bank - Renovation of 6+38 public schools (Armenian Territorial Development Fund is implementing the program), 45.5 million USD loan agreement is signed, (project output 4). Energy Efficiency co-financing from the partner will be ~ 9mln USD.

- New co-financier: World Bank - Renovation of 80 pre-schools and 4 upper secondary schools in partnership with the Project Implementation Unit of the Ministry of Education, Science, Culture and Sports of the Republic of Armenia, 14.1 million USD loan is signed in 2022, (project output 4). Energy Efficiency co-financing from the partner will be ~ 2.2mln USD

- New co-financier: Eurasian Development Bank - Renovation of 20 public buildings in partnership with the Renewable Resources and Energy Efficiency Fund (R2E2 is implementing the program and control the fund allocation)– 3.9 million USD, (project output 4). Energy Efficiency co-financing from the partner will be ~ 3.1mln USD

- New co-financier: Government of Armenia (via the State Subventions program and line ministries/agencies) funding the retrofit of MABs and public buildings: education, culture and healthcare facilities, administrative buildings – 79.6 million USD, (project output 4). Energy Efficiency co-financing from the partner will be ~ 29.9mln USD

- New co-financier: Ministry of Territorial Administration and Infrastructure, has introduced the state subsidy program for the green loans via local banks (subsidized interest rate). The aim is to incentivize the EE retrofits of single-family houses - mostly in rural areas of Armenia. (project output 4). Energy Efficiency co-financing from the partner will be ~ 1.82mln USD

- New co-financier: Armenian General Benevolent Union, full retrofitting of youth center in Yerevan – 4 million USD (project output 4). Energy Efficiency co-financing from the partner will be ~ 0.84mln USD
- Increased amount of UNDP Armenia contribution– from 1.42 million USD to 3.07 million USD, (project outputs 1 & 5).

- European Investment Bank loan financing – decreased from 86.25 million USD to ~14.8 million USD.

Refer to a detailed list of agreements and their status, risk level (of non-materialization as of 30th May 2023) in annex 5. The GCF grant is calculated after the partner has concluded the tendering and contracting processes for selected buildings retrofit and has clear a BOQ (Bill of Quantities) for civil works in place. Out of this BOQ, energy efficiency related costs (that are validated against eligibility criteria of respective Operations Manual) are confirmed. Based on the type of building- a respective share of the GCF grant is paid in line with Operations Manual.

The GCF grant is transferred to the partner (separate) project bank account and is allowed to be used only after the respective share of energy efficiency works are concluded, and results validated by the project engineers.

Then the partner is allowed to use the GCF grant amount from that account (e.g., pay his contractor) and report back to UNDP including all the financial documents, invoices etc. Thus, GCF grant is deployed on a quasi-performance-based basis. Ratios/shares of GCF grant are prescribed as per Operations Manuals. In case the final cost of construction is lower than cost of the contract, the party is transferring back the difference to UNDP to maintain the prescribed level of ratios.

As a part of monitoring and verification of projects' energy efficiency as well as GHG emission reduction, the energy audit is conducted for each building based on the approved design. The energy efficiency passport is being developed for the building with calculation of energy performance indicators and GHG emissions at the baseline and project scenarios. Energy savings as well as GHG reduction are quantified (annually and 20 years).[7]

UNDP can submit to the GCF Secretariat, as part of the 5th, 6th and 7th disbursements the following:

- For disbursement 5: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 8mln for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 5 will be applied.

- For disbursement 6: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 12.3mln for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 6 will be applied.

- For disbursement 7: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 5.7mln for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 7 will be applied.

The referenced amounts correspond to 70 per cent of cumulative co-finance envelope which is required for GCF grant subsidy to materialize for the given tranche and will represent a firm commitment, which will following receipt of the GCF proceeds (disbursement) be translated into relevant legal agreements. UNDP is not in a position to sign the legal agreements prior to receiving GCF grant.

[7] Engineers are continuously monitoring the retrofit process and progress that the energy efficiency related works are implemented in line with the Operations Manual - based on expert verification the decision is taken to release the GCF grant.

A request for partial disbursement was submitted to GCF on 24 February 2023 – for 2.4 million USD and approved by GCF Secretariat in April 2023. As per request of the GCF, the number of disbursements was increased from 6 to 7 and the amounts are adjusted in view of the partial disbursement amount. Please see below the updated disbursement schedule:

Disbursements	GCF proceeds, (USD)	Indicative expected date of disbursement
Disbursement 1	729,000	Disbursed
Disbursement 2	1,608,000	Disbursed
Disbursement 3	3,596,000	Disbursed
Disbursement 4	2,400,000	15 June 2023
Disbursement 5	3,600,000	30 March 2024
Disbursement 6	5,500,000	30 January 2025
Disbursement 7	2,567,000	30 May 2025
Total	20,000,000	

This is in line with the workplan and cashflow planning (for UNDP to be able to reach 70 per cent of the expenditures) while allowing for more operational smoothness and efficiency in view of the previous project experience and the time it took to receive previous disbursements from GCF (2-5 months).

B.5. CHANGES IN PROJECT FINANCING INFORMATION? Yes ☒ No ☐ If Yes, Please elaborate below
(Please see annex 5 for the proposed revisions of the Schedule 2 of the FAA)

	Financial Instrument		Amount	Currency	Tenor		Pricing (% interest or IRR for equity)
(a) Total project financing	**(a) = (b) + (c)**		102.7	million USD ($)			
(b) GCF financing to recipient	Grant		20	million USD ($) Options	N/A		N/A
	** The UN official exchange rate of the period when the co-financing letter is received from the partner is used*						
	Total requested		20	Options			
(c) Co-financing	**Financial Instrument**	**Amount**	**Currency**	**Name of Institution**	**Tenor (years)**	**Pricing (% interest or IRR for equity)**	**Seniority**

to recipient	Grant	29,862,746	USD[8]	Government of Armenia (State Subvention Program, Ministry of Territorial Administration and Infrastructure, Ministry of Health, Office of Prime Minister)	N/A	N/A	N/A
	Grant	17,096,000	USD[9]	Municipality of Yerevan	N/A	N/A	N/A
	Loan	9,037,777	USD	Asian Development Bank	25 years (incl. grace period of 5 years)	2% per annum	N/A
	Loan	14,824,318	USD[10]	European Investment Bank			N/A
	Grant	3,122,479	USD	Eurasian Development Bank	N/A	N/A	N/A
	Loan	2,200,000	USD	World Bank	3 years	1.73% per annum	N/A
	Loan	1,820,000	USD	Local Banks	N/A	N/A	N/A
	Grant	843,069	USD	Armenian General	N/A	N/A	N/A

[8] Local currency is the Armenian drams (AMD). USD 1=AMD 384.31 as per UN Operational Rates of Exchange for 01 May 2023. Exchange rates are updated regularly (twice in a month) and available **here**.

[9] Co-financing from Yerevan municipality as of the FP was USD 8mln (under components 3 and 4) plus new commitments are AMD 16bln and USD 1.4mln (both under component 4). Local currency is the Armenian drams (AMD). USD 1=AMD 384.31 as per UN Operational Rate of Exchange for 01 May 2023. Exchange rates are updated regularly (twice in a month) and available **here**.

[10] Loan of the European Investment bank is provided in Euros (EUR 7mln). USD 1=EUR 0.844 as per UN Operational Rates of Exchange for 01 Dec 2017 (date when financial agreement was signed). Exchange rates are updated regularly (twice in a month) and available **here**.

				Benevolent Union			
	Grant	3,071,603.14	USD	UNDP (parallel)	N/A	N/A	N/A
	Grant	420,000	USD	UNDP (Cash)	N/A	N/A	N/A
	Grant	400,000	USD	Government (Ministry of Environment, In kind)	N/A	N/A	N/A
	Lead financing institution: N/A						
	** Please provide a confirmation letter or a letter of commitment, for any additional co-financing resulting from changes, issued by the co-financing institution.*						

C.1. ANY UPDATES TO BACKGROUND INFORMATION ON PROJECT / PROGRAMME SPONSOR (EXECUTING ENTITY)?
YES ☐ NO ☒ IF YES, PLEASE ELABORATE

N/A

C.2. ANY INSTITUTIONAL / IMPLEMENTATION ARRANGEMENTS? Yes ☒☐ No If yes, please elaborate

The project's overall governance structure – including the organizational structure, as well as the roles and responsibilities of the project management unit, and Project Board – remains unchanged.

Then Minister of Environment/GCF NDA/Co-Chair of the Project board is committed to support materialization of all the presented co-financing flows, including by coordinating the actions of respective ministries and agencies. In its turn UNDP to timely provide all the information and statuses of each co-financing flow.

Following UNDP rules and procedures, it is important to distinguish between the executing entity (EE) (implementing partner (IP)) and a responsible party. Both have an execution function; however, the EE/IP has the overall execution responsibility and accountability under the Subsidiary Agreement (as defined in the AMA and FAA). This has been the standard for all UNDP projects with GCF, which are implemented under a national implementation modality. As per UNDP internal rules, there can be, and in this project, there is, only one executing entity/implementing partner (who has rights to contract other responsible parties or partners). In this context, the executing entity contracted UNDP to provide support service on procurement and administration, giving UNDP the right to sign responsible party agreement on its behalf. This is in line with UNDP internal rules and procedures.

The methodology for construction and supervision of installation of building energy retrofits by the project remains as stated in the Operational Manuals developed by the project and approved by the GCF in 2020.

All the partners underwent UNDP Partner Capacity Assessment (PCAT). Following UNDP rules, (when the co-financing amount is > USD 150,000) Micro-assessments (Harmonized Approach to Cash Transfers) are conducted prior to signing the RPAs/LoAs, as follows[11]:

- Environmental Project Implementation Unit (EPIU), a state institution of the Ministry of Environment of the Republic of Armenia. The EPIU will be responsible for implementation of Component 1 of the Project on building sector MRV and knowledge management. The total amount of GCF grant is USD 700,000.
- Renewable Resources and Energy Efficiency Fund (R2E2) - under this Agreement, R2E2 Fund acting as Responsible Party shall implement the energy efficient retrofitting activities of up to 20 buildings. Total amount of GCF grant is 780,000 USD (AMD 300,000,000[12]).
- Armenian Territorial Development Fund (ATDF) - under this Agreement, the ATDF acting as Responsible Party shall implement the rehabilitation, including energy efficient retrofitting activities of 6 (six) school buildings. The total amount of GCF grant is 560,000 USD (AMD 215,000,000).
- Armenian General Benevolent Union (AGBU) - under this Agreement, the AGBU acting as Responsible Party shall implement the rehabilitation, including energy-efficient retrofitting activities of a Malatia-Sebastia Youth Center (A and B buildings) in Yerevan, Armenia. The total amount of GCF grant is 211,000 USD (AMD 81,000,000).
- Ministry of Health (MoH) - under this Agreement, the MoH acting as Responsible Party shall implement the rehabilitation, including energy-efficient retrofitting activities of 2 large healthcare facilities in Yerevan, Armenia. The total amount of GCF grant is 752,000 USD (AMD 288,807,000).
- 16 Communities (Ashtarak, Vedi, Argel, Stepanavan, Spitak, Tashir, Kajaran, Sisian, Gyumri, Dilijan, Berd, Hrazdan, Gavar, Akhtala, Alaverdi, Ijevan) signed LoAs with the UNDP on behalf of the EE- under these Agreements communities acting as Responsible Parties are implementing retrofits (including energy efficiency) of residential and public buildings (so far implemented 98 MABs and 5 public buildings EE retrofits). The total amount of GCF grant is 2, 170,000 USD (AMD 833,540,000).
- Health and Labor Inspection Body via Office of Prime Minister (HLIB/OPM) - under this Agreement, OPM acting as Responsible Party is implementing the EE retrofitting activities of one public building. The total amount of GCF grant is 38,400 USD (AMD 14,745,000).
- As per the FAA - Municipality of Yerevan (YM) - under this Agreement, YM acting as Responsible Party is implementing the energy efficient retrofitting activities of public buildings. As of February 2023, YM has conducted EE retrofits in 33 public buildings with the amount of GCF grant of 1,295,000 USD (AMD 497,570,000).
- Ministry of Finance (MoF) is expected to be engaged as a Responsible Party for energy-efficient retrofitting activities of public buildings.
- Ministry of Territorial Administration and Infrastructures (MoTAI) is expected to be engaged as a Responsible Party for the green loan program with subsidized interest rate for the EE retrofits of single-family houses - mostly in rural areas of Armenia.
- Committee of Urban Development (UDC) is expected to be engaged as a Responsible Party for energy-efficient retrofitting activities of public facilities (schools, kindergartens, sports schools, etc) in Armenia.
- Project Implementation Unit of the Ministry of Health (MoH PIU) is expected to be engaged as a Responsible Party for energy-efficient retrofitting activities of healthcare facilities in Armenia.

[11] The detailed table presenting all the co-financiers/responsible parties is given in the annex 5
[12] AMD-USD exchange rate is 384.31 as per the UNDP official rate as of 1 May 2023.

RP name	Type of agreement	Date signed	Component
EPIU	LoA	22.09.2021	1
Ministry of Health	LoA	20.04.2022	4
Armenian Territorial Development Fund (ADB)	RPA	17.03.2022	4
Office of Prime Minister /HLIB/	LoA	07.12.2022	4
Municipality of Yerevan	LoA	01.12.2021 and 16.03.2022	4
Renewable Resources and Energy Efficiency Fund (EDB)	RPA	18.03.2022	4
Ministry of Education PIU (WB)	LoA	16.03.2023	4
16 communities in the frames of State Subvention Program	LoAs	2020-2023	4

There is a well-structured process to ensure that funds are spent on eligible measures as per the Operations Manual:

1. Partners' capacities are assessed through the UNDP Partner Capacity Assessment Tool (PCAT), which assesses the management and other capacities of the relevant entity. The PCAT is completed for all implementing partners/responsible parties.[13]
2. Micro-assessments (Harmonized Approach to Cash Transfers) are conducted.[14]
3. Spot checks for partners with $50,000 or a higher yearly budget are being scheduled and conducted. (For actual reported expenditures below $50,000, UNDP offices may carry out a spot checks at their discretion. Additional spot checks or audits may be required based on the results of the prior spot checks. A spot check is not required in the year reported expenditures are expected to be audited.)
4. The UNDP Country Office undergoes audit every five years.[15]
5. Audits of partners in line with UNDP rules: For partners with a "Low" and "Medium" Adjusted Risk Rating, internal control audits are to be conducted at least once every other year if annual expenditure exceeds or is equal to $200,000 per year; otherwise, spot checks should be conducted where reported expenditures exceed or are equal to $50,000. For Partners with a "Significant" Adjusted Risk Rating, financial audits are to be conducted every year when expenditures exceed or are equal to $200,000 per year and if a Partner receives two sequential audits with unqualified opinion, and results of spot checks are satisfactory, the Partner's risk rating may be adjusted, and internal controls audits and spot checks performed for the remaining periods in accordance with the Partner's revised Adjusted Risk Rating. For Partners with "High" Adjusted Risk Rating, UNDP internal written clearance is required to engage and issue cash transfers to the partner. For Non-Audited

[13]https://popp.undp.org/SitePages/POPPSubject.aspx?SBJID=452&Menu=BusinessUnit
[14]https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/FRM_Financial%20Management%20and%20Implementation%20Modalities_Harmonized%20Approach%20to%20Cash%20Transfers%20(HACT).docx&action=default&DefaultItemOpen=1
[15] Please, select Armenia in the Audited Business Unit drop down menu to see the latest 2018 country audit report: https://audit-public-disclosure.undp.org/index.cfm

Partners, financial audits are to be conducted every year when expenditures are greater than or equal to $200,000 per year. See Table 2 for the guidance on the frequency of assurance activities.[16]

6. Retrofit designs are being reviewed and eligible measures as per the Operation Manuals are being identified and quantified prior to signing partnership agreements by UNDP.
7. Most of buildings are identified and eligibility of measures/buildings confirmed. In some cases/co-financiers (e.g. R2E2 fund) the buildings pipeline is formed based on applications they are receiving. However, number of buildings, their type and list of eligible measures are identified and clearly reflected in the agreements (LoAs and RPAs).

During the implementation stage, retrofits implemented within these partnerships are regularly monitored and technical assistance is provided on demand.

16 https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/FRM_Financial%20Management%20and%20Implementation%20Modalities_Harmonized%20Approach%20to%20Cash%20Transfers%20(HACT).docx&action=default

C.3. Updated Timetable of Project/Programme Implementation

Basis for the new planning:

- Analysis of the overall country/sector context, Government midterm (2023-2025) plan for funding retrofits of public buildings with conditionality to consider energy efficiency measures and cooperate with the Project.
- Plans of project partners/co-financiers with respect to the timelines for the retrofitting works.
- Re-confirmed interest and commitment of the Government of Armenia at national [both Prime-Minister's level and line ministries], as well regional and municipal levels.
- Following project advocacy, the government introduced breakthrough changes into the national legislation – Budget Code amendments, adjustment of the State Subvention Programme. These changes created the favorable legal environment for accelerated project implementation.

The below timelines are relevant if the decision on restructuring is taken no later than in July 2023 and 4th disbursement received no later than in May 2023.

Legend

X = Completed

X = Initiated

X = Not Yet Initiated

Task	2017		2018				2019				2020				2021				2022				2023				2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q 32	Q 33	Q 34	Q 35	Q 36	Q 37	Q 38
Output 1.1 MRV systems in the buildings sector in Armenia established		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.1.1 MRV framework		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.1.2 EMIS implementation					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TASK	2017		2018				2019				2020				2021				2022				2023				2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q 32	Q 33	Q 34	Q 35	Q 36	Q 37	Q 38
Output 1.2 Knowledge management and MRV information disseminated		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
1.2.1 Stakeholder engagement		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
1.2.2 Website			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
1.2.3 Formats for dissemination		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
1.2.4 Information provision							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Output 2.1 Public instruments for the promotion of investment in EE selected		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
2.1.1 Public instrument selection		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Output 2.2 Support provided to on-going legal reform in the field of EE			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.2.1 Support to authorities			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.2.2 Introduction of legislation					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.2.3 Public building legislation							X	X	X	X	X														X	X	X	X	X	X	X	X	X	X	X	X
Output 2.3 Support provided for the creation of an enabling policy framework for EE		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TASK	2017		2018				2019				2020				2021				2022				2023				2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q 32	Q 33	Q 34	Q 35	Q 36	Q 37	Q 38
retrofits in multi-owner residential buildings																																				
2.3.1 Support for HOAs		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 2.4 Support provided to building owners / managers / owner associations / ESCOs on legal matters related to EE retrofit projects							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
2.4.1 Support for multi-owner buildings							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
2.4.2 ESCOs							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
Output 2.5 Exit strategy implemented													X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.5.1 Exit strategy													X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.1 Technical assistance provided to banks and other financial institutions		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.1.1 Market facilitation		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.2 Technical assistance for HOA market facilitation provided to banks		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.2.1 Support to banks		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.3 Technical assistance provided to local government		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TASK	2017		2018				2019				2020				2021				2022				2023				2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q 32	Q 33	Q 34	Q 35	Q 36	Q 37	Q 38
to develop EE retrofit projects for publicly owned buildings																																				
3.3.1 Publicly-owned buildings		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.4 Access to affordable capital for EE retrofits provided			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.4.1 Technical structure for financial instruments			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.4.2 Verification							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.5 Marketing platform created			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
3.5.1 Marketing support			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Output 4.1 Targeted financial incentives provided to vulnerable groups to help address the affordability gap							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.1.1. Targeted incentives							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Environmental and Social Safeguards	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Implementation of Gender Action Plan				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inception report (including baselines assessment	X	X	X																																	
First Annual Project Report (APR)			X																																	

TASK	2017		2018				2019				2020				2021				2022				2023				2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q 32	Q 33	Q 34	Q 35	Q 36	Q 37	Q 38
Interim Independent Evaluation Report													X	X																						
Project Completion Report (last APR)																																			X	
Final Independent Evaluation Report																																				X
Project Board meetings	X				X									X				X				X		X						X				X		

D.1. ANY CHANGES TO VALUE ADDED FOR GCF INVOLVEMENT? Yes ☐ No ☒ If yes, please elaborate

The project's strategy for the proposed 36-month extension is based on a foundation of plans and partnerships built over the past two years (when the investment component of the project was unlocked), supported by two core elements for expedited implementation of investment Component 4: 1) a robust and diversified pipeline of energy efficiency renovation projects; and 2) a streamlined process for timely delivery and verification of the renovations. GCF grant remains crucial both with respect to the provision of technical assistance and investment component. The reasoning behind the level of the GCF grant requested for retrofits is described in detail in the operational manuals for each building type (approved by GCF) and has not changed.

As reflected in the prepared refocus analysis submitted to GCF in 2020, the project has a revised output-level approach to how it will apply GCF-funded technical assistance and investment to systematically decarbonize existing building stock. The project has made further adjustments to its plans for the number of buildings to be retrofitted across various building types, with further emphasis on public buildings, where there is greater relative certainty of co-financing and clarity about specific buildings to be renovated, and reduced emphasis on MABs. These are reflected in section F.1. This shift boosts efficiency and cost-effectiveness, as the lowest costs per tonne of GHG emissions reduction and per beneficiary apply to public buildings, with higher costs for MABs and higher costs still for single-family houses.

The project will define the specific local partners for these renovation projects in alignment with the line ministries' annual budget cycle and the subvention programme's established application and approval process. The project plans to develop and maintain the flow of high-quality renovation projects via the following specific steps:

- Expanded training and direct support for apartment owner associations on how to organize, collect funds, achieve consensus on energy efficiency upgrades, and work with community administrations to apply for State Subvention Programme/UNDP-GCF energy efficiency subsidies.
- Expanded promotional outreach among homeowners about the benefits of energy efficiency, including greater attractiveness, comfort, energy savings, and increased property value, as well as the added inducement of subsidy funds.
- Expanded training and outreach among community administrations, emphasizing the benefits to citizens and communities of EE improvements – lower monthly expenses, increased property value, and improved living conditions.
- Outreach to line ministries, facilitated by the Ministry of Finance, about the advantages of pursuing comprehensive energy efficiency improvements to buildings with the assistance of the project.
- Expanded training and outreach among providers of EE renovation services, with a specific eye toward encouraging them to promote and market their services.
- Training, procedural clarifications, and support for staff capacity enhancements at state building code enforcement agency, leading to an affirmed and effectively implemented mandate for enforcing building energy performance requirements for capitally renovated buildings.

The structure of co-financing was changed after the refocus analysis (2020). Changes were introduced as a result of the changes to the targets with respect to the different building types. Also, it is worth to mention, that compared to 2019-2020 the market prices for energy efficiency works and materials have grown significantly which also results in higher level of leverage co-financing need. Further, fewer residential buildings and increased number of public buildings will lead to an increased number of project overall beneficiaries.

D.2. ANY CHANGES TO EXIT STRATEGY? Yes ☒ No ☐ If yes, please elaborate

It is proposed to amend the condition 9.02 (e), which requires the submission of the exit strategy, to be submitted to GCF not 60 months but 84 months after the FAA effectiveness in view of the proposed project end date extension. This will enable the project to prepare an exit strategy that will be relevant at that given point of time (assuming the extended implementation timeline), considering all the progress made and results/impact to be maintained prior to the new project end date. Below is presented the general outline/approach from the draft Exit Strategy:

Preliminary Exit Strategy for Component 1 – Phasing over strategy

The exit strategy for this component is embedded in the activities of the project. It is envisaged that the continuity of the outcomes will be assigned to the government agency, i.e. Environmental PIU of the Ministry of Environment of the Republic of Armenia, in the context of assuring the sustainability of operations of monitoring-reporting-verification (MRV) system. The project will further provide hardware, software, guidelines, and methodologies, as well as extensive training and capacity building activities to assure smooth transition/hand-over of the MRV system.

Preliminary Exit Strategy for Component 2 – Phasing down strategy

For this component, a Phasing Down strategy is used. The Project efforts will be focused on enabling policy framework for EE retrofitting, thus making the activities under the Project a regular function of the public administration and local self-governance. The strategy envisages development of legal-regulatory acts, guiding documents, operational manuals and training documents to gradually transfer the project activities to the relevant stakeholders i.e. authorities, private developers, beneficiaries.

Preliminary Exit Strategy for Component 3 – Phasing over and out strategy

Exit strategy for this component is Phasing over and Phasing out - for the municipal EE projects in residential sector in communities other than Yerevan as well as for those in Yerevan.

The Project envisages the development of a business model that allows leveraging private funds and institutions into the building EE sector. Implementation of residential EE programs in multi-apartment buildings and single-family houses will involve local commercial banks, private ESCOs and suppliers, as well as homeowners to organize, finance and implement the EE measures. This gradually will phase out the Project and scale up investments in post project period. For this to happen the Project shall elaborate all necessary contractual arrangements and drafts, conduct awareness raising campaign, capacity building for banks and private ESCOs.

Phasing Out strategy is for the projects in smaller municipalities, where communities will select and identify building EE retrofits, finance fully or partly the investments, and support residents and contractors in sustainable maintenance and operation of the buildings.

Preliminary Exit Strategy for Component 4 – Phasing out strategy

Project will design and implement the Financial Incentive (FI) Program for Multi-Apartment Buildings (MABs) and for the Public Buildings (PBs) to stimulate investment in EE building retrofit.

The Phasing Out strategy is applied for this component for the municipal EE retrofitting efforts for public and municipal buildings. This means the Project envisages creation of resource centers at the municipalities to support with preparation and operation of EE retrofitting projects and maintenance of the assets thereof.

For the single-family houses EE retrofitting a Phasing Over strategy is used. It is planned to have extensive awareness raising and capacity building of financial institutions, as well as cash-back incentive bonuses to promote lending of the

local financial institutions to the EE retrofit financing. After the Project this activity will become a standard business for financial institutions.

The Project plans to handover the organization role of the Project expert team to the local institution, i.e. Armenia Renewable Resources and Energy Efficiency Fund (R2E2). The Fund has experience and capacity to finance and implement EE retrofit projects. Involvement of R2E2 in implementation of the Project will add a value to it and will ensure sustainability and replicability of the activities performed during the Project period.

E.1. ANY CHANGES TO IMPACT POTENTIAL? YES ☒ NO ☐ IF YES, PLEASE ELABORATE

Potential of the project/programme to contribute to the achievement of the Fund's objectives and result areas

E.1.1. Mitigation / adaptation impact potential

The project is to achieve greenhouse gas (GHG) emission reductions from improved energy efficiency and lower energy-intensity buildings, targeted at an estimated ktCO_2 per year or 1.387 million tCO_2 over the 20-year lifetime of the EE interventions. Based on the project calculations around the identified pipeline of the project, the GHG emission target is not expected to be reduced, using the original project methodology and grid emission factor of 0.436. However, if the target value will be recalculated with the grid emission factor of 0.390 and compared to Ex-Post estimates using a conservative approach (as requested by GCF) the decrease in the impact will not be more than 5%[17]: 1.118 vs 1.177 million tCO_2 over the 20-year lifetime of the EE interventions.

The project is also to have 280,000 beneficiaries, which is an increase from the original FP number. The proposed change for the extended period of the project duration is to increase a share of public buildings targeted by the project. The co-financing required is increased because of retrofits of public buildings cost more than in case of residentials. In other words, to achieve the project targets/goals with new composition of buildings – more leveraged co-financing is required, which is now secured by the project.

E.1.2. Key impact potential indicator

GCF core indicators	*Expected tonnes of carbon dioxide equivalent (t CO_2 eq) to be reduced or avoided (Mitigation only)*	*Annual*	100 ktCO_2 per year
		Lifetime	1.118[18] million tCO_2 over 20-year lifetime
	• *Expected total number of direct and indirect beneficiaries, disaggregated by gender (reduced vulnerability or increased resilience);* • *Number of beneficiaries relative to total population, disaggregated by gender (adaptation only)*	*Total*	N/A (adaptation)
		Percentage (%)	N/A
Other relevant indicators	N/A		

[17] Original target as per FP is 1,388,332 tCO2/ 20 years, which was calculated using the GHG emission factor of 0.436 (as approved by GCF in 2017 in the Funding Proposal). As per GCF request, this target figure was recalculated using the GHG emission factor of 0.390 and is now equal to 1,176,690 tCO2/ 20 years. The emission reductions assessed based on ex-ante and the ex-post data are equal to 1,118,289 tCO2/ 20 years, and the difference between the target and the GHG ER makes not more than 5%.

[18] The conservative approach based on ex-post data and lower GHG emission factor is used here.

E.2. ANY CHANGES TO OTHER INVESTMENT CRITERIA[19]? YES ☐ NO ☒ IF YES, PLEASE PROVIDE AGAINST EACH INVESTMENT CRITERION THAT IS AFFECTED BY THE CHANGE, AS APPLICABLE

There are no changes to the project's fulfillment of other investment criteria, relative to the original Funding Proposal. The project can offer the following positive updates:

The **Sustainable Development Potential** of the project, involving various environmental, socioeconomic, and gender-related co-benefits of the implementation of EE upgrades in both residential and public buildings, remains on track for fulfillment as noted in the Funding Proposal.

The project continues to fulfill the **Needs of the Recipient** investment criterion as envisioned in the Funding Proposal, as EE retrofits alleviate energy poverty among vulnerable citizens while also reducing state and communities' budget spending on energy for public buildings. The project also helps to increase the effectiveness and impact of the State Subvention Programme and is expected to have similar effects on the new state-funded EE loan subsidy program for the residential sector.

Country Ownership of the project remains strong, as the Government of Armenia and its various ministries, the Municipality of Yerevan, and local communities throughout the country have welcomed the project's results and look forward to further fruitful collaboration leading to expanded impact. The commitment of the Government to building renovation is reflected in the budgeting of US $291 million in state budget funds for building renovation in 2023-2025. The approved 2023 budget for the State Subvention Programme is US $55 million, with the expectation of continued funding, thereafter, based on the success and popularity of the program. The project has already been engaging in high-level discussions with the Ministry of Finance and the Deputy Prime Minister's offices to ensure GCF-funded integration of incremental energy efficiency measures into these budgeted renovation plans, up to the limits of the project's Component 4 budget.

The project also remains squarely aligned with the Government's climate commitments, including its Nationally Determined Contribution for 2021-2030, which was approved in April 2021.

The project has continued and enhanced its fulfillment of the investment criterion of **Efficiency and Effectiveness** by

1) applying increased emphasis on renovation of public buildings, which have greater Fund-level impacts per GCF dollar than other building types;

2) using new finance mechanisms involving a diversified set of partners – state, donor, commercial, and private – to maximize the impact of GCF grant funds. The total cost of EE retrofits of 142 buildings through the end of December 2022 has been AMD 22.2 billion, including the co-financing by the Project of AMD 1.6 billion, or about 7 percent.

E. 3. Engagement with NDAs, civil society organizations and other relevant stakeholders

[19] Besides impact potential, the other GCF investment criteria are paradigm shift potential; sustainable development potential; needs of the recipient; country ownership; and efficiency and effectiveness

The AE regularly consults the National Designated Authority (the Ministry of Environment of the Republic of Armenia). Furthermore, the project, with UNDP's active facilitation, has mutually supportive relations with the Government of Armenia, including the Office of the Prime Minister, the Ministry of Finance, the Ministry of Territorial Administration (which runs the State Subvention Programme) and numerous line ministries. Collaboration with the Municipality of Yerevan remains strong and positive. Project staff and UNDP Country Office senior management regularly engage with all these parties via very frequent email correspondence, one-on-one meetings, and meetings of the Project Board. All updates to planned project activities have been discussed with these and other stakeholders and providers of co-financing.

** The information can be drawn from the project/programme appraisal document.*

F.1. ANY CHANGES IN ECONOMIC AND FINANCIAL ANALYSIS? Yes ☐ No ☒ If yes, please elaborate

In 2020, Armenia faced a double challenge: outbreak of the COVID-19 pandemic and escalation of military hostilities in the Nagorno-Karabakh conflict area. These challenges put the achieved development gains at risk due to an array of negative consequences to people, businesses, and economy. This situation was also a severe test of the nation's resilience to cope with two complex simultaneous challenges, that mutually reinforced each other.

As a result, in 2020-2021 when Project investment component was opened for operation the Project couldn't progress with the initially envisaged pace as the Government and other major stakeholders inevitably had to prioritize life-saving actions across the country. Importantly, these developments also complicated and delayed implementation of the planned activities in line with Project Refocus Analysis.

The Project Interim Evaluation Report (September 2020) considered the Refocus Analysis and recommended the Project extension so that sufficient time is allocated for implementation of the revised financing strategy. Moreover, GCF offered an opportunity for extending its projects worldwide, considering delays due to the COVID-19 pandemic.

The economic/financial analysis is conducted using the same model that was used for refocus analysis in 2020. That model is based on the GCF co-financing shares as per approved Operation Manuals as well as is reflecting only the actual co-financing (leveraged from partners) used for energy efficiency (not general retrofit costs). See also section F.1 - "Average cost per retrofit".

Armenia as a former Soviet state is still using construction cost estimation norms and regulations developed during soviet time as Building Codes, along with developed composite indices for cost adjustments to current periods.

The Estimation Norms, which is a collection of 49 normative books (classified by category of construction work of building codes, merged by type of construction works), provide detailed technical computational resources for the construction work, with a variety of coefficients adjusting weather conditions, elevation above sea level and different other elements.

These directories present material, labor, and equipment rates on the basis of specific base date and are the normative basis for the cost estimation system for construction projects. Unit prices used in cost estimates related to construction materials and expenses associated with workmanship and use of machinery are taken from reference values, which are defined/updated and published by the Ministry of Finance of Armenia on monthly basis.

The unit prices and various coefficients embedded in bill of quantities and used for formulation of cost estimates for construction projects are based on the references defined and published by the Ministry of Finance of Armenia on a monthly basis. In accordance with coefficients published by the Ministry of Finance of RA, the unit costs and expenses associated with workmanship and use of machinery have increased in a steady manner, for December 2019 and February 2023 (AMD):

The use of the GCF grant subsidy scheme remains unchanged with respect to the principles presented in the Refocus Analysis and Operational Manual. Please see below:

Building type	**Percentage of total funding for retrofits of each building type provided by the various funding sources**				
	Private finance (households)	**Public finance (municipality/ local authority)**	**Public finance (Government of Armenia)**	**GCF grant**	**Total**
Public buildings - technical package 1 (full retrofit) [a]	N/A	N/A	80%, largely through existing Project Implementation Units of the Government, using the loan and/or grant finance from ADB, WB and EDB, blended with state budget co-finance.	20%	100%
Public buildings – technical package 2 (simple retrofit)[a]	N/A	30-50%, through- Communities' budget in the frames of Subvention Program, Yerevan Municipality own budget	40-60%, through- State budget in the frames of Subvention Program, Yerevan Municipality own budget	10%	100%
MABs with state subsidy	5% contribution to investment as well as future maintenance costs.	Typically, 15%, range 5% - 20% depending on size of community budget and subsidy from GoA	State Subvention Programme, typically 60%, can range between 55% - 70%, depending on the distance from the capital	25%	100%
MABs Not eligible for state subsidy	No contribution to investment but to the future maintenance costs.	Through Municipality of Yerevan own budget, 78-80%	N/A	20% - 22%	100%
Single-family homes	91% contribution from home owners	N/A	N/A	9%	100%

[a] As defined in the Operational Manual (please refer to annex 7), Technical Package 1 includes measures to ensure compliance with Class C energy efficiency requirements. Technical Package 2 is less ambitious and includes measures to ensure a minimum 25% in specific energy consumption compared to baseline.

(Please see annex 8)	Number of buildings			Average cost per retrofit (USD)			Average level of grant (%)			Average grant per building (USD)			Total amount of GCF grant (million USD)			Total investment (million USD)		
	FP	2020 [20]	2023	FP	2020	2023	FP	2020	2023	FP	2020	2023	FP	2020	2023	FP	2020	2023
Public buildings - technical package 1 (full retrofit)[a]	23	20	103	250,000	250,000	300,000	5%	20%	20%	12,500	50,000	60,000	0.287	1.0	6.18	5.75	5.0	30.9
Public buildings - technical package 2 (simple retrofit)[a]	150	200	202	95,000	160,000	115,000	8%	10%	10%	7,600	16,000	11,500	1.14	3.2	2.32	14.25	32.0	23.2
MABs[21]	290	-	-	112,430	-	-	22%	-	-	24,735	-	-	7.173	-		34.8	-	-
MABs under state subsidy programme	-	319	188	-	109,630	110,000	-	25%	25%	-	27,408	27,500	-	8.7	5.17	-	35.0	20.7
MABs not eligible for state subsidy	-	40	10	-	109,630	140,000	-	20%	20%	-	21,926	28,000	-	0.9	0.28	-	4.4	1.4
Single-family homes	6,000	200	200	10,000	10,000	10,000	9%	9%	9%	900	900	900	5.4	0.2	0.18	60.0	2.0	2.0
Total	**6,463**	**779**	**703**										**14.0**	**14.0**	**14.1**	**114.8**	**78.4**	**78.2**

[a] The amount of grant that a building receives is set according to the package of measures implemented. In practice, the package for each building will be defined individually and the numbers of buildings implementing each package may deviate from those provided here.

[20] Figures presented under the 2020 columns are from the Refocus Analysis prepared for this Project in 2020.

[21] The numbers are now reconciled to remove the discrepancy that appears in the FP which originally exceeded the approved grant

	Number of buildings			GHG reduction (tCO_2 / year)			Number of beneficiaries		
	FP	2020[22]	2023	FP[23]	2020[24]	2023[25]	FP	2020	2023
Public buildings - technical package 1 (full retrofits)	23	20	103	4,937 (4,184)	4,293 (3,639)	(24,001)	23,000	20,000	103,000
Public buildings - technical package 2 (simple retrofit)	150	200	202	14,243 (12,072)	26,400 (26,099)	(19,037)	105,000	140,000	141,400
Multi-family apartment buildings	290	-	-	22,997 (19,491)	-	-	52,200	-	-
MABs under state subsidy programme	-	319	188	-	35,090 (33,544)	(11,721)	-	57,420	33,840
MABS not eligible for state subsidy	-	40	10	-	3,208 (3,165)	(791)	-	7,200	1,800
Single-family homes	6,000	200	200	27,239 (23,087)	360 (364)	(364)	30,000	1,000	1,000
Total	**6,463**	**779**	**703**	**69,416 (58,834)**	**69,351 (66,811)**	**(55,914)**	**210,200**	**225,620**	**281,040**

[22] Figures presented under the 2020 columns are from the Refocus Analysis prepared for this Project and submitted to GCF in 2020.
[23] Figures in brackets are recalculated using the new emission factors as agreed with GCF (for grid: 0.390 for gas: 0.205). Emission factors during FP stage were: 0.436 and 0.247 respectively.
[24] Figures in brackets are recalculated using the new emission factors as agreed with GCF (for grid: 0.390 for gas: 0.205). Emission factors during refocus were: 0.4038 and 0.206 respectively.

F.2. ANY CHANGES IN TECHNICAL EVALUATION? Yes ☐ No ☒ If yes, please elaborate

N/A

F.3. ANY CHANGES IN ENVIRONMENTAL, SOCIAL ASSESSMENT INCLUDING GENDER CONSIDERATIONS? Yes ☒ No ☐ If yes, please elaborate

In view of the new co-financiers and partners for the 3-year extended period, and an assessment of the risks by the partners as well as by UNDP, the project is proposed to be recategorized from C (no/low risk) to B (medium risk) as per the GCF safeguards standards. (This corresponds to the category of moderate risk as per the UNDP safeguards policy, and medium risk as per the GCF safeguards policy, as confirmed during the re-accreditation of UNDP). The co-financing changes cannot be viewed separately from the safeguards related changes, as they are interconnected and shall be approved together.

The Environmental and Social Safeguards Framework/Plan (ESMF/P – annex 3) will serve as a practical tool to manage the limited environmental and social impacts of proposed investments under output 4.1 and as a platform for consultations with stakeholders and potential project beneficiaries. Please refer to annex 2 for the most recent safeguards screening, which identified moderate risks related to asbestos and air pollution stemming from the EE retrofits in project Output 4.1; the ESMF/P was developed to primarily address those limited moderate risks and is based on that screening. These risks can be managed by measures that involve asbestos screening, the use of best-practice asbestos waste management guidelines, air pollution screening, and other standard measures for managing low risks that are stipulated in the ESMF/P (annex 3). The draft ESMF/P was also translated and disclosed on UNDP and/or other websites/in an accessible location as per the UNDP disclosure guidance and the GCF information disclosure policy in English and an official local language. (Please see annex 4 for disclosure details.)

F.4. ANY CHANGES IN FINANCIAL MANAGEMENT AND PROCUREMENT? Yes ☐ No ☒ If yes, please elaborate

N/A

G.1. ANY CHANGES TO THE RISK ASSESSMENT SUMMARY? Yes ☐ No ☒ If yes, please elaborate

As noted above, risks of the COVID-19 pandemic and associated disruptions to normal work, as well as risks of military conflict between Armenia and Azerbaijan, have materialized between 2020 and 2022. The risk of non-materialization of new co-finance sources is presented in G.2.

G.2. ANY CHANGES FOR RISK FACTORS AND MITIGATION MEASURES? Yes ☒ No ☐ If yes, please elaborate

Selected Risk Factor 1

Description	Risk category	Level of impact	Probability of risk occurring
Complications arising from the COVID-19 pandemic and associated restrictions	Technical and operationalTechnical and operational	High (>20% of project value)	Low

Mitigation Measure(s)

The project has adopted various measures to deal with COVID-19 and its effects on work, including increased use of remote meetings. The requested extension of the project time frame is itself a way of managing the realized risk of COVID-19 disruptions.

Selected Risk Factor 2

Description	Risk category	Level of impact	Probability of risk occurring
Escalated military hostilities with Azerbaijan	Technical and operational	High (>20% of project value)	Medium

Mitigation Measure(s)

The conflict has impacted the project in many ways. The most direct impact was the mobilization of construction workers for military service, causing significant delays in the ongoing works. The military escalation also affected the activity and priorities of government agencies, with national security and humanitarian priorities fully dominating the political agenda. Notably, demand among some local communities for State Subvention Programme funding for EE retrofits has slowed as these communities seek to use their limited subvention allotments for more urgent infrastructure repair made necessary by the military conflict.

The project seeks to minimize these risks by redoubling its efforts to highlight the benefits of building EE upgrades in terms of cost savings and comfort. It should be noted that many communities are not directly affected by infrastructure damage from military activity, which takes place in border regions.

The current situation with the blockage of the road between Armenia and Nagorno-Karabakh creates continuing uncertainty. Nevertheless, there are signs that the project will be able to proceed without major disruption. The Government does continue to show strong commitment to the project and to building retrofits, including a plan in the midterm state budget for 2023-25 to include allocations of up to $291 million for building renovation, part of which could be blended with project funds to support incremental EE upgrades.

Please refer also to annex 2 for UNDP environmental and social safeguards screening.

Selected Risk Factor 3

Description	Risk category	Level of impact	Probability of risk occurring
Non-materialization of co-financing	Financial	High (>20% of project value)	Low

Mitigation Measure(s)

The UNDP has engaged a number of partners to assemble a pipeline of projects, which would enable replacement of a pipeline from one partner (that does not materialize by/during a certain period) by pipeline of another partner. The project is designed on a principle of first-come-first-served and thanks to the expanded range of new partners/co-financiers proposed in this restructuring paper, the risk of co-finance materialization is perceived to be relatively low (unlike it was the case with a single co-financier in the original approved funding proposal.)

UNDP will submit to the GCF Secretariat, as part of the 5th, 6th and 7th disbursements the following:

For disbursement 5: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 8mln for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 5 will be applied.

For disbursement 6: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 12.3mln for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 6 will be applied.

For disbursement 7: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 5.7mln for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 7 will be applied.

Selected Risk Factor 4

Description	Risk category	Level of impact	Probability of risk occurring
Impacts of foreign exchange rates fluctuations	Financial	Low (<5% of project value)	Low

Mitigation Measure(s)

The project will absorb any foreign exchange fluctuation related impacts, such as rising costs of retrofits and/or services.

** Please expand this sub-section when needed to address all potential material and relevant risks.*

H.1. REVISED LOGIC FRAMEWORK.

Please update the logic framework in accordance with the GCF's Performance Measurement Framework under the Results Management Framework.

H.1.1. Paradigm Shift Objectives and Impacts at the Fund level[26]							
Paradigm shift objectives							
Shift to low-emission sustainable development pathways	1. The project objective is to use an integrated suite of interventions to systematically de-carbonize the existing building stock to realize both energy savings and sustainable development benefits. 2. The project will create a favorable market environment and scalable business model for investment in energy efficiency retrofits, leading to sizeable energy savings and accompanying GHG emission reductions (directly, 1.118 million tCO2 over the 20-year lifetime of the investments, including additional indirect savings, a total of between 4.2- 4.4 tCO2eq). Original target as per FP is 1,388,332 tCO2/ 20 years, which was calculated using the GHG emission factor of 0.436 back in 2015-2016. If the original methodology and grid emission factor (0.436 as per the original FP) is considered, **there is no significant change to the projected impact (comparing to the approved funding proposal)** due to the newly identified financiers/pipeline of energy efficiency retrofit interventions which estimates/will be financed with the goal to reach this target. The below changes reflect adjustments in grid emission factor (0.390) and takes more conservative approach based on ex-post available data.						
Expected Result	**Indicator**	**Means of Verification (MoV)**	**Baseline**	**Target**		**Assumptions**	***Update***
				Mid-term (if applicable)	Final		
Fund-level impacts							
M3.0 Reduced emissions from buildings, cities, industries and appliances	GCF core indicator: tonnes of carbon dioxide equivalent (t CO2eq) reduced or avoided as a	EMIS system to be set up in Component 1 of the Project	0	100 kt CO2e / year	Direct 1.118 Mt CO2e over 20 years	Housing units and buildings are more resource- efficient and comfortable	***No changes if original FP methodology for GHG calculations is followed. (The***

[26] Information on the Fund's expected results and indicators can be found in its Performance Measurement Frameworks available at the following link (Please note that some indicators are under refinement): http://www.gcfund.org/fileadmin/00_customer/documents/Operations/5.3_Initial_PMF.pdf

	result of Fund-funded projects/programmes					(and yet more affordable) at both high and low temperatures and thus subject to reduced long-term climate impacts (Please see annex 8)	***here presented reflects more conservative estimates via using of the calculational and Ex-Post approaches.)***
M3.0 Reduced emissions from buildings, cities, industries and appliances	GCF core indicator: Cost per t CO2eq Defined as total investment cost / expected lifetime emission reductions	Project monitoring data on costs plus data from the indicator on tonnes of CO2eq reduced	0	-	12.6 USD / tCO2e for GCF		***See above.***
M3.0 Reduced emissions from buildings, cities, industries and appliances	GCF core indicator: Volume of finance leveraged by the project and as a result of the Fund's financing, disaggregated by public and private sources	Project reporting	0		US$ 148,708,825 – loans (out of which US$ 19,720,320 for Energy Efficiency measures) US$ 130,425,378 -State/public funding (out of which US$ 57,341,537 for Energy Efficiency measures)		***Proposed revision based on 2023 data.*** ***Financial figures presented in the co-financing letters received from Project partners (for APR annual exercise) usually are higher as they reflect the full costs of the buildings'***

							retrofits planned.[27] ***The co-financing for EE measures to be monitored against the target and reported on by UNDP (for APR annual exercise).***

[27] The energy efficiency related costs usually make up 15-35% of the committed amounts, depending on buildings' size, retrofit types, measures planned etc. As for MAB retrofits as well as EDB financed public buildings EE retrofits – EE associated costs make up 100% of the committed figures.

H.1.2. Outcomes, Outputs, Activities and Inputs at Project/Programme level							
Expected Result	**Indicator**	**Means of Verification (MoV)**	**Baseline**	**Target**		**Assumptions**	***Status update***
				Mid-term (if applicable)	Final		
Project/programme Outcomes	**Outcomes that contribute to Fund-level impacts**						
M5.0 Strengthened institutional and regulatory systemsM5.0 Strengthened institutional and regulatory systems	5.1 Institutional and regulatory systems that improve incentives for low-emission planning and development and their effective implementation (outcome indicator for Component 2)	Score on World Bank RISE indicators for building sector	34	64	91	Strengthened institutional and regulatory systems lead to practical change and do not remain on paper	***No changes***
M7.0 Lower energy intensity of buildings, cities, industries and appliancesM7.0 Lower energy intensity of buildings, cities, industries and appliances	7.1 Energy intensity / improved efficiency of buildings, cities, industries and	Reported data from project monitoring component	**Residential buildings: 185 kWh / m2 per an** **Public buildings: 200 kWh / m2 per an**	-	Reduced by 50%	Rebound effect due to lower energy intensity is limited	***This target was based at the project design stage on the limited statistical data available at the period of the Project design. However, by the time of refocus analysis in 2020 more enhanced statistics was available and thus it was decided to reflect updated baseline data in here to be closer to reality.***

Robust MRV for the building sector established (Component 1 – Establishment of building sector MRV and knowledge management)	Establishment of a web-based, publicly-accessible MRV database	Project reporting	No MRV in place	Website establish-ed and fully web-accessible	5,000 website hits per year	MRV systems continue producing data after project end	***No changes***
National, sub-national and local authorities adopt and implement an enabling policy framework for EE retrofits (Component 2 – Policy de-risking)	See indicator 5.1 above						***No changes***
Access to affordable capital for EE retrofits provided (Component 3 – Financial de-risking)	Value of loans for building renovation provided	Reported data from project monitoring component	0	US$ 22m	US$ 100m	The Government continues to bring energy prices in line with market prices Level of skills among local professionals is maintained at a level that can support market growth Lenders make use of learning	***No changes***

						opportunities offered by the financial mechanisms supported in this project	
Affordability of EE retrofits for most vulnerable households ensured through targeted financial incentives to building / apartment owners / ESCOs (Component 4 – Financial incentives)	Number of vulnerable beneficiaries (lowest quintile of household income) with improved building EE	Applications submitted for the financial incentives scheme	0	15,000	50,000	Targeted financial incentives are aligned with the capital provided for EE retrofits, effectively leading to the implementation of retrofits	***No changes***
Project/programme outputs	**Outputs that contribute to outcomes**						
1.1 MRV systems for the buildings sector in Armenia established	Development and coverage of MRV system and database	Regular project reporting	N/A	Developed & in use for renovated buildings: full coverage of buildings retrofitted in this project	Developed & in use for renovated buildings: full coverage of buildings retrofitted in this project	Building occupants cooperate with the implementation of MRV systems	***No changes***

1.2 Knowledge management and MRV information disseminated	Number of beneficiaries with access to knowledge about energy use in buildings, opportunities and financing for EE	Regular project reporting	N/A	Number of benefi-ciaries: 50,000	Number of benefi-ciaries: 250,000	Learning opportunities offered by this project lead to sustained lending for EE investments	***No changes***
2.1 Public instruments for the promotion of investment in EE selected	UNDP's framework to support policy-makers in selecting public instruments to promote energy efficiency investment in developing countries used, adapted as necessary	Report on implement ation of the framework	Frame- work not used for EE in Armenia	Number of public instruments selected: 3	Number of public instru-ments selected: 3	Policymakers follow through on implementation of the selected instruments	***No changes***
2.2 Support provided to on-going legal reform in the field of EE	Binding legislation on building codes and adequate secondary legislation adopted.	National legislation	Level 3. Policies proposed and consul-tation ongoing.	Level 4. Strong policy adopted	Level 5. Strong policy adopted and institu-tional capacity streng-thened	UNDP's working relationship with the Government is effectively employed to maintain the momentum for legal reform	***No changes***

2.3 Support provided for the creation of an enabling policy framework for EE retrofits in multi-owner residential buildings	Adequate secondary legislation providing a clear and effective set of functional models and a standard set of rules for multi-owner building management bodies to undertake EE retrofits developed, introduced and enforced	National legislation	Secondary legislation lacking	Level 6. Sub- sector plans reflect key policy targets	Level 7. Regula tory frame-work developed	UNDP's working relationship with the Government is effectively employed to maintain the momentum for creation of an enabling policy framework	***No changes***
2.4 Support provided to building owners / managers / owner associations / ESCOs on legal matters related to EE retrofit projects	Business models for repayment of EE investments implemented	Regular project reporting	Level 1. No business models for repayment of EE invest-ments in buildings in place	Level 3. Strong proposal defined with buy-in from stakeholder s confirmed	Level 5. Financial mecha-nism in operation with evidence of stability	Gradual introduction of performance-based contracts and risk transfer to ESCOs, combined with capacity building, lead to the development of an ESCO market	***No changes***
2.5 Exit strategy measures implemented	Additional exit strategy measures designed and implemented	Regular project reporting	N/A	Additional exit strategy measures designed	Additional exit strategy measures implement ed	Exit strategy succeeds in maintaining the momentum created by the project and leads	***No changes***

						to local stakeholders continuing to further develop the market	
3.1 Technical assistance provided to banks and other financial institutions	Capacity of banks to develop and market products for energy efficiency retrofits in individual houses	Survey of bank employees	Banks do not have the capacity to develop and market products for energy efficiency retrofits in individual houses	2 Armenian banks have the capacity to develop and market products for energy efficiency retrofits in individual houses	4 Armenian banks have the capacity to develop and market product s for energy efficiency retrofits in individual houses	Banks are interested and participate in capacity building to enable them to deliver EE projects in individual houses	***No changes***
3.2 Technical assistance for HOA market facilitation provided to banks	Capacity of banks to develop and market products for energy	Survey of bank employees	Banks do not have the capacity to develop and market products for	2 Armenian banks have the capacity to develop and market	4 Armenian banks have the capacity to develop	Banks are interested and participate in capacity building to enable them to deliver EE	***No changes***

	efficiency retrofits in multi-owner residential buildings		energy efficiency retrofits in multi- owner residential buildings	products for energy efficiency retrofits in multi-owner residential buildings	and market product s for energy efficiency retrofits in multi-owner residential building s	projects in multi-owner residential buildings	
3.3 Technical assistance provided to local government to develop EE retrofit projects for publicly-owned buildings	Percentage of local government employees in Armenia who believe they have the capacity to develop EE retrofit projects for publicly-owned buildings	Survey of local governmen t employees	Local govern- ment does not have the capacity to develop EE retrofit projects for publicly-owned buildings	50% of local govern-ment emplo- yees believe local govern-ment has the capacity to develop EE retrofit projects for publicly-owned buildings	80% of local govern-ment employ-ees believe local govern-ment has the capacity to develop EE retrofit projects for publicly-owned buildings	Local government is interested and participates in capacity building to enable it to deliver EE projects in public buildings	***No changes***
3.4 Access to affordable capital for EE retrofits provided	Amount and number of loans for building renovation provided	Reported data from project monitoring component	No lending provided	US$ 20 million	US$ 80 million	Economic situation continues to improve	***This figure includes the loan from EIB phase 1 (~USD 14.8 mln), as well as other loans committed by new co-financiers.***

3.5 Marketing platform created	Marketing materials developed and platform created	Marketing materials, project reporting	No marketing materials exist	Marketing materials created and disseminated to at least 5,000 stakeholders	Marketing platform created and disseminated to at least 25,000 stakeholders	Marketing campaign successfully raises awareness of the opportunities offered by building EE retrofits	***No changes***
4.1 Targeted financial incentives provided to vulnerable groups to help address the affordability gap	Financial mechanism to provide targeted financial incentives in place and incentives provided	Reported data from project monitoring component	No incentives in place	Incentives provided to 15,000 beneficiaries	Incentives provided to 50,000 beneficiaries	Sufficient uptake of the financial incentive among the target market of vulnerable homeowners	***No changes.***
	Number of public buildings that receive a financial incentive for energy efficient retrofits, including area (m2)			-	103 Public buildings - technical package 1 (full retrofits)		***Commitments received from new co-financiers of the project (ADB, EDB) as well as Government's new commitments for the years 2023-2025 show large number of public buildings planned for the deep EE retrofits. (Please see annex 5)*** ***The number of buildings for final target increased from 20 (as per FP) to 103.***
	Number of public buildings that receive a			-	202 Public buildings - technical package 2		***Changes are based on the Refocus Analysis, (prepared and provided to the GCF in 2020), as well as commitments from the Project partners and envisaged cooperations.***

	financial incentive for energy efficient retrofits, including area (m2)				(simple retrofits)		***The target has slightly increased from 200 to 202.***
	Number of residential buildings that receive a financial incentive for energy efficient retrofits, including area (m2)			-	10 MABS not eligible for state subsidy		***The target has decreased from 40 to 10. This is linked to partnership with Municipality of Yerevan and their commitment to co-finance EE retrofits in 10 MABs. (Please see annex 5)***
	Number of residential buildings that receive a financial incentive for energy efficient retrofits, including area (m2)			-	188 MABs under state subsidy programme		***(Please see annex 5)*** ***The number decreased from 319 to 188.*** ***Decrease is linked to overall dynamic of MAB retrofits in the frames of State Subvention Programme for the last 2 years: Priorities have slightly been changed in local communities after COVID and war, showing somewhat decrease in EE retrofits of MABs***
	Number of single-familty houses that receive a financial incentive for energy efficient			-	200 Single-family individual buildings		***The new target decreased from 6,000 to 200 (and was agreed in 2020 when* Refocus *Analysis was submitted to GCF).***

	retrofits, including area (m2)						
Activities	**Description**		**Inputs**		**Description**		***Status updates***
1.1.1 MRV framework	Development of the MRV framework, including guidelines and monitoring methodologies for the various categories of buildings		International consultants, Local consultants, PMU staff time, Funds		Hiring of consultants to develop MRV framework in conjunction with the project team		***No changes***
1.1.2 EMIS implementation	Support to full implementation of building EMIS in targeted buildings for demonstration and capacity building purposes		Software International consultants, Local consultants, PMU staff time, Funds		Following competitive tender and based on detailed technical specifications, Ministry of Nature Protection financially supported for the purchase of EMIS systems		***No changes***
1.2.1 Stakeholder engagement	Identifying appropriate formats for reaching the relevant stakeholders		International consultants, Local consultants, PMU staff time, Funds		Specialist communications consultants engaged to develop communications strategy		***No changes***
1.2.2 Website	Establishment of a website that will provide information and a platform for communication between the different stakeholders		Web developer, Web hosting		Competitive tender for Web design and implementation		***No changes***
1.2.3 Formats for dissemination	Formats for information dissemination will be developed based on their likely effectiveness for raising awareness, facilitating information access and providing		International consultants, Local consultants, PMU staff time, Funds		Specialist communications consultants assist with the development of informative and accessible literature and other media communications tailored to specific user-groups		***No changes***

	actionable guidance and support to the sector			
1.2.4 Information provision	Provision of information to consumers	Printing and publication costs, international consultants, Local consultants, PMU staff time, Funds	Procurement of design and print services, and development of accessible information products	***No changes***
2.1.1 Public instrument selection	The project will make use of UNDP's framework to support policymakers in selecting public instruments to promote energy efficiency investment in developing countries	Workshops (2) and meetings (15), International consultants, Local consultants, PMU staff time, Funds	Specialist DREI consultants and UNDP staff to assist in instrument selection	***No changes***
2.2.1 Technical specialist support to authorities to adopt and implement an enabling policy framework	Support to national, sub-national and local authorities to adopt and implement an enabling policy framework for EE retrofits.	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to assist in preparation of policies and regulations defining the terms of EE retrofits	***No changes***
2.2.2 Introduction of legislation	Support to the gradual introduction of binding legislation on energy auditing, energy passports / certificates and labelling for existing buildings	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to assist in design and implementation of legislation, and the design and implementation of auditing, passports and labelling	***No changes***
2.2.3 Public building legislation	Support to the introduction of legislation specific to public buildings	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to assist in design and implementation of legislation	***No changes***

2.3.1 Technical support from experts to policy- makers in developing policy related to HOA legal status, payment enforcement and management	Support to policy-makers in developing policy relating to HOA legal status, payment enforcement, professional management and consensus levels	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to advise and develop evidence base for policymakers for development of HOA policy	***No changes***
2.4.1 Legal support to management of multi- owner buildings related to energy efficiency retrofits	Provide support on legal matters related to EE retrofit projects for multi-owner buildings	International consultants, Local consultants, PMU staff time, Funds	Specialist legal support hired on a retainer basis and made available to retrofit projects as and when required	***No changes***
2.4.2 ESCOs	Provide support to establishing ESCOs	International consultants, Local consultants, PMU staff time, Funds	Specialist technical and legal consultants hired to assist with support to ESCO establishment	***No changes***
2.5.1 Exit strategy	Development and implementation of exit strategy	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to advise on design and implementation of post-project impact sustainability measures	***No changes***
3.1.1 Technical support provided to banks to develop and market energy efficiency products to	Provide support to banks to develop and market products for energy efficiency in individual residences	International consultants, Local consultants, PMU staff time, Funds	Technical and financial consultants hired to assist with support to local banks	***No changes***

individual residences				
3.2.1 Technical support provided to banks to develop and market energy efficiency products to multi-owner building management (HOAs)	Support to development of bank products for HOAs	International consultants, Local consultants, PMU staff time, Funds	Technical and financial consultants hired to assist with support to local banks	***No changes***
3.3.1 Publicly-owned buildings	Support to the process of identification, development and aggregation of technically and financially feasible EE retrofit projects in publicly-owned buildings	International consultants, Local consultants, PMU staff time, Funds	Specialist consultants hired to assist with development of screening criteria and aggregation methodologies for EE retrofit projects in public buildings	***No changes***
3.4.1 Technical structure for financial instruments	Establishment and maintenance of the technical structure for the financial de-risking instruments offered	Concessional loans: US$ 86.25 million	Mode of operation of the financial de-risking instruments designed, implemented and documented	***No changes***
3.4.2 Verification	Verification of funded investments	International consultants, Local consultants, PMU staff time, Funds	MRV system designed, implemented and documented	***No changes***
3.5.1 Marketing support	Provide marketing support to banks	Printing and publication costs, international consultants, Local consultants, PMU staff time, Funds	Specialist communications consultants assist with the development of literature and other media communications tailored to specific customer segments	***No changes***

4.1.1 Targeted incentives	Targeted financial incentives provided to building / apartment owners, or the ESCOs serving these clients	Incentives: US$ 14 million	Mode of operation of the financial incentives designed, implemented and funds transferred	***No changes***

I. UPDATED SUPPORTING DOCUMENTS FOR RESTRUCTURING PAPER

☒ NDA No-objection Letter (annex 1)

☒ Environmental and Social Risk Screening (annex 2)

☒ Environmental and Social Management Plan/Framework (annex 3)

☒ Disclosure Form (ESMF/P) (annex 4)

☒ Proposed revisions of the Schedule 2 of the FAA and Review of co-financiers/partners (annex 5)

☒ Decree of the Government of Armenia # 2111-N from 29 December, 2022: On Approving the Measures to Ensure Implementation of the 2023 Annual Budget of the Republic of Armenia (annex 6)

☒ Operational Manuals and Technical Reviews as part of the Refocus Analysis for the Armenia (FP010) cleared by GCF Secretariat (annex 7) *, **, ***, ****, *****.

☒ Summary table for the project impacts overview (annex 8)

☒ GHG emission calculations

AMENDED AND RESTATED
FUNDED ACTIVITY AGREEMENT
(GRANTS)

between

UNITED NATIONS DEVELOPMENT PROGRAMME

and

GREEN CLIMATE FUND

FUNDED ACTIVITY: FP010 "De-risking and scaling up investment in energy efficient building retrofits"

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Amended and Restated Funded Activity Agreement (Grants)

This FUNDED ACTIVITY AGREEMENT (the "**FAA**" or this "**Agreement**") dated 7 June 2017, as amended and restated by an amendment and restatement agreement dated _____ 2024 between:

UNITED NATIONS DEVELOPMENT PROGRAMME, an international organization established by the General Assembly of the United Nations pursuant to its resolution 2029(XX) of 22 November 1965 and having its registered office at One UN Plaza, New York, New York 10017, United States of America (the "**Accredited Entity**" or "**UNDP**"); and

THE GREEN CLIMATE FUND, designated as an operating entity of the financial mechanism under Article 11 of the United Nations Framework Convention on Climate Change and established pursuant to the Governing Instrument for the Green Climate Fund, approved by the COP at its seventeenth session, on 11 December 2011, and is annexed to Decision 3/CP.17, possessing juridical personality in order to operate effectively internationally, having such legal capacity as is necessary for the exercise of its functions and the protection of its interests and having its headquarters at Songdo, Incheon, Republic of Korea ("**GCF**" or the "**Fund**"),

each a "**Party**" and together the "**Parties**".

WHEREAS

(A) The Accredited Entity and the GCF entered into an accreditation master agreement on 5 August 2016 (the "**AMA**"), which sets forth, amongst others, the general terms and conditions applicable between the Parties in connection with a funded activity;

(B) In accordance with Clause 4.11 of the AMA, the Accredited Entity has submitted to the Fund a funding proposal, which is attached to this Agreement as Annex 1 (the "**Funding Proposal**") and in respect of which the Accredited Entity requested changes in the restructuring proposal dated 7 June 2023 ("**Restructuring Proposal**"), which is attached to this Agreement as Annex 3 requesting funding for the activity described therein (the "**Funded Activity**" or "**Project**"), and the changes agreed by the Fund and, in the case of the change in the ESS categorisation, by the Board by its decision B.36/09 ("**Restructuring Decision**") are reflected in this Agreement;

(C) The NDA of the Host Country has issued the No-Objection Letter dated 4 September 2015 with respect to the Funding Proposal. In addition, the NDA of the Host Country has issued the No-Objection Letter with respect to the changes proposed in the Restructuring Proposal;

(D) The Board of the Fund, by its decision B.13/23 ("**Approval Decision**"), approved the Funding Proposal in the amount of USD 20,000,000 (twenty million US Dollars), contingent on the fulfilment of the conditions and with due consideration of the recommendations as contained in annex III, "List of conditions and recommendations" to the Approval Decision; and

(E) In accordance with Clause 6.02 of the AMA, the Parties now wish to enter into this Agreement in order to set out the agreed terms for the implementation of the Funded Activity.

THE PARTIES HEREBY AGREE AS FOLLOWS:

Clause 1. Definitions; AMA

1.01 The terms of the AMA are incorporated in, and form part of, this Agreement and pursuant to Clauses 1.02 and 1.03 of the AMA, any derogations from, deviations or modifications to the AMA in relation to the Funded Activity are set forth in this Agreement. In case of termination of the AMA, its terms as incorporated in this Agreement shall continue to apply.

1.02 In the event of a conflict between:

(a) The terms and conditions in the Clauses of this Agreement and the terms and conditions of any of its Schedules or Annex, the terms and conditions in the Clauses of the Agreement shall prevail; and

(b) The terms and conditions in the Schedules to this Agreement and the terms and conditions in the Annex to this Agreement, the terms and conditions in the Schedules shall prevail.

1.03 Wherever used in this Agreement, terms defined in the AMA shall have the respective meanings therein set forth unless modified herein or the context otherwise requires. Additional terms used in this Agreement shall have the following meanings:

(a) "**Accredited Entity Fee**" shall have the meaning ascribed to it in Clause 4 of this Agreement;

(b) "**Budget**" means the costs of the Funded Activity and the breakdown thereof, as set out in Part A of Schedule 2 to this Agreement;

(c) "**Civil Works**" means all types of civil, mechanical, electrical or other engineering services (other than consulting services) as well as the supply of construction materials and equipment to be financed out of the GCF Proceeds;

(d) "**Closing Date**" means the date which is eight (8) years after the Effective Date (or such later date as the Fund shall establish by notice to the Accredited Entity), on which the Accredited Entity's right to receive GCF Proceeds to the GCF Account in respect of the Funded Activity will have terminated;

(e) "**Co-financiers**" means the co-financiers for the Project as described in Annex 3;

(f) "**Co-financing**" means jointly the amounts of funding to be provided by the Co-financiers, and separately, any of such co-financing;

(g) "**Completion Date**" means the date which is no later than one (1) year after the Closing Date (except if otherwise agreed with the Fund);

(h) "**Disbursement Plan**" means the disbursement plan included in Part B of Schedule 2;

(i) "**Effective Date**" shall have the meaning ascribed to it in Clause 6.01 of this Agreement;

(j) "**Eligible Expenditures**" means any reasonable costs of Goods, Services, Civil Works or sub-grants to be financed out of the GCF Proceeds for the implementation of the Funded Activity in accordance with this Agreement, the AMA and the Funding Proposal;

(k) "**ESMF/P**" means the Environmental and Social Management Framework and Plan;

(l) "**Executing Entity"** means the entity specified in Clause 2.02 of this Agreement;

(m) "**Funded Activity**" or "**Project**" shall have the meaning ascribed thereto in Recital (B);

(n) "**Funding Proposal**" shall have the meaning ascribed thereto in Recital (B);

(o) "**Grant**" means the GCF Proceeds in the amount specified in Clause 3.01 of this Agreement, as approved by the Board, which the Fund has decided to make available for the Funded Activity, which shall be exclusive of the Accredited Entity Fee;

(p) "**Host Country**" means the Republic of Armenia;

(q) "**Implementation Arrangements**" mean the contractual arrangement(s) to be entered into and/or the administrative arrangement(s) to be established by the different parties involved in the implementation of the Funded Activity as set out in Schedule 3;

(r) "**Implementation Plan**" means the calendar for the implementation of the Funded Activity set forth in Schedule 5;

(s) "**Project Document**" means a document that the Accredited Entity enters into with the Host Country in accordance with the SBAA defining the detailed financial, procurement and implementation plans, and the respective responsibilities of the parties thereto in respect of the Funded Activity or an assistance. For the avoidance of doubt, the Project Document shall serve as the Subsidiary Agreement and shall reflect the requirements of this Agreement and the AMA, as applicable;

(t) "**Request for Disbursement**" means the template request for disbursement in Schedule 6 to this Agreement;

(u) "**Responsible Party**" means each of the following parties, and they, collectively, the "**Responsible Parties**":

(i) The Municipality of Yerevan;

(ii) Environmental Project Implementation Unit (EPIU) State Agency of the Ministry of Environment of the Republic of Armenia;

(iii) Renewable Resources and Energy Efficiency Fund (R2E2);

(iv) Armenian Territorial Development Fund (ATDF);

(v) Armenian General Benevolent Union Representation in Armenia (AGBU);

(vi) Ministry of Health of the Republic of Armenia (MoH);

(vii) [Eligible] Municipalities within the Republic of Armenia[1]

(viii) The Office of the Prime Minister of the Republic of Armenia (OPM);

(ix) Ministry of Finance of the Republic of Armenia (MoF);

(x) Ministry of Territorial Administration and Infrastructures of the Republic of Armenia (MoTAI);

(xi) Urban Development Committee (UDC); and

(xii) Project Implementation Unit of the Ministry of Health of the Republic of Armenia (MoH PIU).

[1] To be selected/assessed in line with UNDP rules and procedures

(v) "**SBAA**" means Standard Basic Assistance Agreement between UNDP and the Government of the Republic of Armenia dated 8 March 1995; and

(w) "**Social and Environmental Screening Report**" means the social and environmental screening report provided by the Accredited Entity as an annex to the Funding Proposal, as set out in Annex 2.

1.04 Any references in this Agreement to "Clause", "Schedule" or "Annex" shall refer to a clause of, a schedule to or an annex to, this Agreement, unless otherwise specified or context requires otherwise.

1.05 The revised logic framework set out in Schedule 7 supersedes the logic framework in the Funding Proposal and shall be used by the Accredited Entity for the implementation of the Project.

Clause 2. The Funded Activity

2.01 The Accredited Entity shall monitor and supervise the implementation of the Funded Activity by the Executing Entity, and ensure that the Executing Entity will carry out the Funded Activity, with due diligence and efficiency and in conformity with appropriate financial, economic, social, environmental and administrative practices, and shall provide, promptly as needed, the funds, facilities, services and other resources required for the Funded Activity.

2.02 The Ministry of Environment of the Republic of Armenia shall act as the Executing Entity for this Funded Activity, as further described in Schedule 3.

2.03 The Accredited Entity shall ensure that the obligations set out in this Agreement are observed and carried out by the Executing Entity pursuant to the Subsidiary Agreement, in accordance with the relevant provisions of the AMA.

2.04 The implementation of all the activities of the Funded Activity shall be completed no later than the Completion Date and shall be subject to confirmation by the Fund based on the completion report to be provided in accordance with Schedule 4.

Clause 3. The Grant; Disbursements

3.01 Subject to the terms and conditions of this Agreement, the Fund agrees to make available to the Accredited Entity by or before the Closing Date, as set forth in the Disbursement Plan attached hereto as Part B of Schedule 2, an amount equal to USD 20,000,000 (twenty million US Dollars), which shall be disbursed by the Accredited Entity to the Executing Entity in the form of a grant for the purposes of and to assist in financing the Funded Activity.

3.02 The Grant shall be transferred, in accordance with the Disbursement Plan provided in Part B of Schedule 2, to the Accredited Entity upon the fulfillment by the Accredited Entity, to the satisfaction of the Fund, of the relevant conditions precedent to disbursement set forth in Clause 8 below. In accordance with this Clause 3.02, the Grant shall be transferred to the bank account to be notified by the Accredited Entity to the Fund in writing in the Request for Disbursement. For the avoidance of doubt, the GCF Account for the Funded Activity will be a ledger account.

3.03 The GCF Holding Currency for disbursements shall be USD.

3.04 The Accredited Entity shall make the proceeds of the Grant available to the Executing Entity in the form of a grant in accordance with the Project Document to be entered into between the Accredited Entity and the Executing Entity under the terms and conditions consistent with this Agreement and the AMA.

3.05 The Accredited Entity shall ensure that (a) the Grant will be used by the Executing Entity exclusively to finance the Eligible Expenditures, in accordance with the AMA and this Agreement, as set out in the Funding Proposal, and as further specified in the Budget; and (b) all the Eligible Expenditures shall be accrued by the Executing Entity before the Completion Date.

3.06 After the first disbursement by the Fund, all subsequent disbursements shall be subject to the expenditure of at least seventy per cent (70%) of the previous disbursements for the Eligible Expenditures.

3.07 The GCF Proceeds shall not be used to finance any costs incurred prior to the Effective Date.

3.08 The financial reporting and accounting currency for the Funded Activity shall be USD.

Clause 4. Accredited Entity Fee

4.01 The Accredited Entity's fee in relation to the Funded Activity shall be an amount equal to nine per cent (9%) of the aggregate amount of the GCF Proceeds used to finance Eligible Expenditures (the "**Accredited Entity Fee**").

4.02 ***Disbursement of the Accredited Entity Fee.*** The Accredited Entity Fee shall be paid in instalments at the time of each Grant disbursement. The amount of each instalment shall be equal to nine per cent (9%) of the related Grant disbursement. All such disbursement of the Accredited Entity Fee shall be paid together with the Grant disbursements and deposited into the bank account referred to in Clause 3.02 above.

4.03 The final instalment of the Accredited Entity Fee shall be an amount equal to the Accredited Entity Fee less all previous instalments of the Accredited Entity Fee paid to the Accredited Entity under this Clause 4.

4.04 If, after the Completion Date, the aggregate amount of the GCF Proceeds used to finance Eligible Expenditures is less than the amount referred to in Clause 3.01, the Accredited Entity shall, on thirty (30) days' written notice from the Fund, refund to the Fund the amount by which the total amount disbursed to the Accredited Entity under Clause 4.02 exceeds the Accredited Entity Fee, unless otherwise agreed by the Fund.

4.05 If the Fund decides to suspend Grant disbursements, in accordance with Clause 15.03 of the AMA, the Fund may also, at its own discretion, suspend the payment of Accredited Entity Fee.

Clause 5. Administration of Grant by the Accredited Entity

5.01 ***Permitted Reallocation.*** Any reallocation among the Funded Activity's outputs described in Part A of Schedule 2 resulting in a variation of more than ten per cent (10%) of the previously agreed budget for the output-from which the funds are to be reallocated must be approved in writing by the Fund in advance.

5.02 ***Taxation***. The tax exemptions accorded under the SBAA shall apply to Goods and Services procured with, and sub-grants financed out of the GCF Proceeds.

Clause 6. Effectiveness

6.01 This Agreement shall enter into effect on the date upon which the Fund dispatches to the Accredited Entity a notice of its acceptance of the evidence specified below ("**Effective Date**"):

(a) A duly authorized and executed copy of this Agreement by the Accredited Entity;

(b) A certificate issued by the Accredited Entity's most senior legal officer, in a form that is satisfactory to the Fund, certifying that this Agreement entered into by the Accredited Entity has been duly authorized or ratified by all necessary corporate actions, duly executed and delivered on behalf of the Accredited Entity, and is legally binding and enforceable upon the Accredited Entity in accordance with its terms;

(c) A certificate confirming the availability of the Accredited Entity's Co-financing for the Funded Activity in the amount specified in the Funding Proposal; and

(d) An indicative disbursement schedule by the Accredited Entity indicating month and year for the disbursement of the GCF Proceeds by the Fund to the GCF Account for the implementation of the Funded Activity.

6.02 If, before the Effective Date, any event has occurred, which would entitle the Fund to suspend the right of the Accredited Entity to request disbursement if this Agreement had been effective, the Fund may postpone the dispatch of the notice referred to in this Clause 6 until such event (or events) has (or have) ceased to exist.

6.03 ***Termination for Failure to Become Effective***. This Agreement and all obligations of the Parties under it shall terminate if it has not entered into effect by the date which falls ninety (90) days after the date of this Agreement, unless the Fund, after consideration of the reasons for the delay and following consultations with the Accredited Entity, establishes a later date for the purpose of this Clause 6. The Fund shall promptly notify the Accredited Entity of such later date.

Clause 7. Reporting, Monitoring and Evaluation Schedule

7.01 The reporting, monitoring and evaluation of the Funded Activity shall be done in accordance with Schedule 4.

Clause 8. Conditions Precedent to Disbursement

8.01 The obligation of the Fund to disburse GCF Proceeds in connection with the Funded Activity under this Agreement shall be subject to the following conditions having been fulfilled to the satisfaction, in form and substance, of the Fund:

(a) *Conditions precedent to first disbursement*:

(i) Effectiveness of this Agreement;

(ii) Delivery to the Fund by the Accredited Entity of an executed copy of the Subsidiary Agreement, in the form of a Project Document, between the Accredited Entity and the Executing Entity; and

(iii) Completion of the detailed evaluation of the financial management capacity of the Municipality of Yerevan and the Environmental Project Implementation Unit of the Ministry of Nature Protection under the UNDP Framework for Cash Transfer to Implementing Partners as satisfactory to implement the Project.

(b) *Conditions precedent to the second disbursement:*

(i) Completion and submission to the GCF in form and substance satisfactory to the GCF and the Accredited Entity of an operational manual for the implementation of financial incentives under output 4 (as described in Schedule 1) identifying eligibility and selection criteria for the targeted beneficiaries.

(c) *General conditions for all disbursements*:

(i) Other than in relation to the first disbursement, submission of evidence by the Accredited Entity to the Fund that at least 70% (seventy per cent) of the funds previously disbursed have been spent for Eligible Expenditures;

(ii) Other than in relation to the first disbursement, submission by the Accredited Entity of APRs and financial information in accordance with the AMA;

(iii) Delivery of a Request for Disbursement, in accordance with the template attached hereto (Schedule 6), by the Accredited Entity, signed by the person or persons authorized to do so, within thirty (30) calendar days prior to the date on which the disbursement is requested to be made, which date of disbursement shall not be later than the Closing Date; and

(iv) Delivery to the Fund by the Accredited Entity of evidence, satisfactory to the Fund, of the authority of the person or persons authorized to sign each Request for Disbursement and the authenticated specimen signature of each such person.

Clause 9. Additional Representations, Warranties and Covenants of the Accredited Entity

9.01 In addition to clause 18.01 of the AMA, the Accredited Entity represents and warrants that:

(a) On the date of the execution of this Agreement and the date of each disbursement made by the Fund under this Agreement, there are no circumstances of which the Accredited Entity is aware, including through its oversight of the Project as per the obligations of this FAA, the AMA and UNDP's own policies and practices, that may substantially interfere with the performance of the Accredited Entity's obligations under this Agreement, the AMA or with the implementation of the Funded Activity, or otherwise jeopardize the achievements of any objectives, outcomes or outputs of the Funded Activity;

(b) On the date of the first disbursement by the Fund under this Agreement and throughout the term of this Agreement, the Subsidiary Agreement remains in effect; and

(c) On the date of each disbursement in respect of output 3, UNDP has received firm commitments for the related Co-financing; and

(d) On the date of each request for disbursement in respect of output 4, (i) firm commitments are in place for at least 70% of all necessary Co-financing for expenditures related to the disbursement requested, and (ii) that all previous-firm co-finance commitments in respect of output 4 have materialized.

9.02 In addition to clause 18.02 of the AMA, the Accredited Entity covenants that as from the Effective Date of this Agreement it shall:

(a) Upon request by the Fund, inform the Fund on the status of the Co-financing funds that have been disbursed and applied to the implementation of the Project activities;

(b) Upon the Accredited Entity becoming aware of any commitment from financial institution(s) (such as the European Investment Bank) for the financing of energy efficiency retrofitting for private residential and public buildings, as provided in the Funding Proposal, and as soon as possible, provide evidence of such commitment to the Fund;

(c) Confirm to the Fund, in the APRs to be submitted to the Fund, the amounts of the Co-financing commitments and Co-financing expenditures in respect of outputs 3 and 4 of the Funded Activity;

(d) Within twenty-four (24) months after the Effective Date, procure an independent evaluator to conduct a technical review of outputs 1, 2 and 3 (as described in Schedule 1), which will be financed by the Accredited Entity, and carried out in accordance with the terms of reference to be provided by the Fund to the Accredited Entity within two (2) months after the Effective Date;

(e) Ensure that no GCF Proceeds disbursed by the Fund are used to finance the implementation of output 4 (as described in Schedule 1) before receiving a written confirmation provided by the Fund that the results of the independent review referred to in Clause 9.02(c) above are satisfactory for implementation of output 4 (as described in Schedule 1);

(f) Within eighty-four (84) months after the Effective Date, submit a fully developed exit strategy in form and substance satisfactory to the Fund;

(g) Ensure that the GCF Proceeds will not support or finance, directly or indirectly, any activities with potential environmental and social risks that are equivalent to category A pursuant to the Environmental and Social Risks Categories to be conducted as part of the Project;

(h) Undertake and/or put in place any adequate measures in order to ensure that the management of the environmental and social risks and impacts arising from the Funded Activity complies at all times with the recommendations, requirements and procedures set forth in the, ESMF/P, which was provided by the Accredited Entity to the Fund before the Restructuring Decision and which shall not be amended, abrogated or waived without prior written approval of the Fund;

(i) Ensure that the retrofitting and civil works to be implemented as part of the Funded Activity (i) are designed, constructed, operated and decommissioned in accordance with good industry practices and any other applicable standards which, in each case, shall be consistent with the practice of other international organizations working in the region, and taking into consideration health and safety risks of third parties or affected communities; and (ii) the quality of such retrofitting and civil works is in accordance with best practices followed by international organizations in the region;

(j) Obtain, or ensure that the Executing Entity shall acquire, all land and rights in respect of land that are required to carry out the Funded Activity and shall promptly furnish to the GCF, upon its request, evidence that such land and rights in respect of the land are available for the purposes of the Funded Activity;

(k) Ensure that the Executing Entity shall acquire all necessary environmental licenses or clearances, and shall promptly furnish evidence, in a form and substance satisfactory to the Fund and upon its request, that such licenses or clearances, are available for the purposes of the Project;

(l) Prior to signing any new letter of agreement or Responsible Party agreement, submit to the Fund the two (2) detailed social and environmental safeguards tools stipulated in ESMF/P, namely, (i) Asbestos waste management guidelines (AWMG); and (ii) the set of pre-defined social and environmental safeguard risk management measures related to the relevant construction works or activities to be executed, in a form and substance satisfactory to the Fund, that will be reflected in each letter of agreement or Responsible Party agreement with Responsible Parties for the implementation of Activity 4.1, and which shall not be amended without the prior-written non-objection of the Fund; and

9.03 Ensure that the legal agreements between the Accredited Entity, Executing Entity and the relevant Responsible Parties are signed and effective prior to the relevant Responsible Party's involvement in the Funded Activity. Pursuant to clause 23.04 of the AMA, the Accredited Entity shall inform the Fund, in the final APR, which steps it intends to take in relation to the durable assets and/or equipment purchased with the GCF Proceeds to implement the Funded Activity.

Clause 10. Additional Remedies to the Fund

10.01 ***Events of Default***. In addition to clause 19 of the AMA, the following events shall constitute an event of default of the AMA and this Agreement:

(a) The Accredited Entity has failed to comply, in any material respect with, or shall have failed to perform in any material respects, any of its obligations under this Agreement.

10.02 ***Remedies/consequences of default.*** If there is an event of default under this Agreement, clause 20 of the AMA shall apply to this Agreement *mutatis mutandis*.

Clause 11. Step-in Rights

11.01 In the event the Fund exercises its rights under clauses 20.01(c), 22.01 and 22.03 of the AMA, the Accredited Entity shall execute such documents and take such steps as are reasonably necessary to enable the Fund to give effect to such provisions.

Clause 12. Applicable Law; Dispute Resolution

12.01 Clauses 28 and 29 of the AMA apply to this Agreement *mutatis mutandis.*

Clause 13. Designated Authority; Notices

13.01 Any notice, request, document, report, or other communication submitted by either the Accredited Entity or the Fund, shall unless expressly specified in this Agreement, be in English and delivered by hand or by facsimile or email to the Party to which it is required or permitted to be given or made to the following addresses:

For the Accredited Entity:

Attn:	Executive Coordinator and Director – Environmental Finance, Vertical Funds, Programming Support, Oversight and Compliance Unit 304 East 45th Street New York, NY 10017 United States of America
Fax:	+1 212 906 5884
Email:	pradeep.kurukulasuriya@undp.org

For the Fund:

Attn:	Division of Mitigation and Adaptation (DMA)
Address:	G-Tower, 175, Art Center-daero Yeonsu-gu, Incheon 22004 Republic of Korea
Fax:	+82 32 458-6092
Email:	dma.postapproval@gcfund.org

With copy to:

Attn:	Division of Portfolio Management (DPM)
Email:	dpm@gcfund.org

Clause 14. Miscellaneous

14.01 ***Assignment; Novation*.** The Accredited Entity will not be entitled to assign or otherwise transfer its rights and obligations under this Agreement, in full or in part, without the prior written consent of the Fund, which consent may be granted or not granted at the Fund's absolute discretion.

14.02 ***Failure to Exercise Rights.*** No delay in exercising, or omission to exercise, any right, power or remedy accruing to any Party under this Agreement upon any default shall impair any such right, power or remedy or be construed to be a waiver thereof or an acquiescence in such default. No action of such Party in respect of any default, or any acquiescence by it in any default, shall affect or impair any right, power or remedy of such Party in respect of any other or subsequent default.

14.03 ***Execution in Counterparts.*** This Agreement may be executed in two counterparts, each of which shall be an original.

14.04 ***Rights of Third Parties***. This Agreement is intended solely for the benefit of the Parties and is not intended to be for the benefit of, nor may any provision be enforced by, any person or entity that is not a party to this Agreement. Any other statute or law to the contrary is hereby excluded or disapplied.

14.05 ***Entire Agreement*.** This Agreement constitutes the entire agreement and understanding of the Parties with respect to its subject matter and supersedes all oral communication and prior *writings* with respect thereto, other than those writings expressly referred to or incorporated into this Agreement entered into hereunder, including the AMA.

14.06 ***Modification or Amendment***. No modification or amendment of this Agreement shall be valid unless in writing and signed by an authorized representative of the Fund and an authorized representative of the Accredited Entity.

14.07 ***Relationship of the Parties.*** Nothing contained in this Agreement shall be deemed or construed as creating a principal-agent relationship between the Parties hereto or be construed to evidence the intention of the Parties to constitute such. Neither Party shall have any express or implied right or authority to assume or create any obligations on behalf of or in the name of the other Party or to bind the other Party to any contract, agreement or undertaking with any third party.

14.08 ***Severability.*** If any term of this Agreement is to any extent invalid, illegal, or incapable of being enforced, such term shall be excluded to the extent of such invalidity, illegality, or unenforceability; all other terms hereof shall remain in full force and effect.

14.09 ***Survival:*** Clause 12.01 of this Agreement shall, unless explicitly provided otherwise, survive for a period of five (5) years after the termination of this Agreement.

IN WITNESS WHEREOF the parties hereto, acting through their representatives thereunto duly authorized, have caused this Agreement to be signed in their respective names as of the day and year first above written and to be delivered at the principal office of the Fund.

UNITED NATIONS DEVELOPMENT PROGRAMME

By _____ Date _____
Pradeep Kurukulasuriya
Executive Coordinator and Director of the Environmental Finance,
Vertical Funds Programming Support, Oversight and Compliance Unit

GREEN CLIMATE FUND

By _____ Date _____
German Jerry Velasquez
Director of Mitigation and Adaptation

Schedule 1. Description of Funded Activity

The description of the Funded Activity is included in the Funding Proposal attached herein as Annex 1. The implementation of the Funded Activity will be carried out in accordance with the table below:

Component	Outputs	Activities
De-risking and scaling up investment in energy efficient building retrofits	1. Establishment of Building Sector MRV	1.1 MRV systems for the buildings sector in Armenia established
		1.2 Knowledge management and MRV information disseminated
	2. Policy De-Risking	2.1 Public instruments for the promotion of investment in EE selected
		2.2 Support provided to on-going legal reform in the field of EE
		2.3 Support provided for the creation of an enabling policy framework for EE retrofits in multi-owner residential buildings
		2.4 Support provided to building owners/managers/owner associations/ ESCOs on legal matters related to EE retrofit projects
		2.5 Exit strategy measures implemented
	3. Financial De-Risking	3.1 Technical assistance provided to banks and other financial institutions
		3.2 Technical assistance provided to banks for HOA market facilitation
		3.3 Technical assistance provided to local government to develop EE retrofit projects for publicly owned buildings
		3.4 Access to affordable capital for EE retrofits provided
		3.5 Marketing platform created
	4. Financial Incentives	4.1 Targeted financial incentives provided to vulnerable groups to help address the affordability gap

Schedule 2. Budget and Disbursement Plan

A. Budget: Costs per Component/Breakdown

Component	Output	Responsible Party	Financing Source	Budget Account Code	Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	TOTAL (USD)	Budget Note
De-Risking and Scaling-up Investment in Energy Efficient Building Retrofits	1. Establishment of building sector MRV and knowledge management	MoE*	GCF														
				71200	International Consultants	0.00	11,754.55	4,760.31	0.00	0.00	0.00	21,000.00	25,000.00	25,000.00	9,000.00	96,514.86	1
				71300	Local Consultants	0.00	12,510.00	22,704.71	35,847.76	0.00	35,059.23	30,000.00	30,000.00	30,000.00	20,000.00	216,121.70	2
				71400	Contractual services-individuals	0.00	0.00	0.00	0.00	0.00	45,756.47	30,000.00	40,000.00	40,000.00	25,000.00	180,756.47	3
				72100	Contractual services-companies	0.00	5,962.00	0.00	0.00	0.00	4,234.21	69,038.00	20,000.00	20,000.00	6,000.00	125,234.21	4
				72200	Equipment and Furniture	0.00	19,273.74	3,132.04	2,583.33	5,667.24	6,979.98	16,500.00	10,000.00	10,000.00	6,000.00	80,136.33	5
				72400	Communication & Audio Visual Equipment	0.00	1,441.50	0.00	0.00	0.00	0.00	11,000.00	9,000.00	9,000.00	5,500.00	35,941.50	7
				72800	Information Technology Equipment	0.00	3,018.71	0.00	0.00	0.00	0.00	19,500.00	0.00	0.00	0.00	22,518.71	8
				73400	Rental & Maintenance of Other Equipmt	0.00	241.75	127.33	957.74	2,650.35	1,453.17	3,000.00	10,000.00	7,000.00	4,000.00	29,430.34	9
				74200	Audio Visual & Printing Production Cost	0.00	690.25	0.00	0.00	0.00	2,527.44	10,000.00	14,000.00	8,500.00	6,000.00	41,717.69	10
				74500	Miscellaneous Expenses	0.00	710.04	781.50	698.64	619.78	685.66	600.00	4,084.01	3,500.00	1,000.00	12,679.63	11
				75700	Training, Workshops and Conferences	0.00	0.00	0.00	0.00	0.00	7,948.56	16,000.00	12,000.00	10,000.00	3,000.00	48,948.56	12
					GCF Sub-total Output 1	**0.00**	**55,602.54**	**31,505.89**	**40,087.47**	**8,937.37**	**104,644.72**	**226,638.00**	**174,084.01**	**163,000.00**	**85,500.00**	**890,000.00**	
		MoE	Accredited Entity														
				71400	Contractual services-individuals	17,891.25	0.00	14,979.83	14,781.77	17,494.57	30,425.58	36,104.51	13,000.00	0.00	0.00	144,677.51	13
				71600	Travel	3,107.14	1,799.21	0.00	0.00	1,758.23	0.00	0.00	0.00	0.00	0.00	6,664.58	14
				72100	Contractual services-companies	4,933.22	0.00	0.00	0.00	23,955.92	0.00	0.00	0.00	0.00	0.00	28,889.14	15
				75700	Training, Workshops and Conferences	15,068.37	0.00	1,489.55	0.00	45.84	3,165.01	0.00	0.00	0.00	0.00	19,768.77	16
					UNDP Sub-total Output 1	**40,999.98**	**1,799.21**	**16,469.38**	**14,781.77**	**43,254.56**	**33,590.59**	**36,104.51**	**13,000.00**	**0.00**	**0.00**	**200,000.00**	
					GCF Total Output 1	**0.00**	**55,602.54**	**31,505.89**	**40,087.47**	**8,937.37**	**104,644.72**	**226,638.00**	**174,084.01**	**163,000.00**	**85,500.00**	**890,000.00**	
					UNDP Co-financing Total Output 1	**40,999.98**	**1,799.21**	**16,469.38**	**14,781.77**	**43,254.56**	**33,590.59**	**36,104.51**	**13,000.00**	**0.00**	**0.00**	**200,000.00**	
					Govt (Ministry of Environment, in kind) Co-financing Total Output 1	**7,500.00**	**15,000.00**	**15,000.00**	**15,000.00**	**15,000.00**	**15,000.00**	**7,500.00**	**2,500.00**	**0.00**	**0.00**	**92,500.00**	
					Output 1 Total	**48,499.98**	**72,401.75**	**62,975.27**	**69,869.24**	**67,191.93**	**153,235.31**	**270,242.51**	**189,584.01**	**163,000.00**	**85,500.00**	**1,182,500.00**	
	2. Policy de-risking	MoE	GCF														
				71200	International Consultants	23,524.01	521.25	1,301.88	0.00	0.00	0.00	80,000.00	25,000.00	30,000.00	15,000.00	175,347.14	17
				71300	Local Consultants	6,776.25	31,535.63	52,767.55	25,381.59	14,358.60	23,912.30	33,000.00	30,000.00	30,000.00	15,000.00	262,731.92	18
				71400	Contractual services-individuals	0.00	0.00	0.00	19,872.63	3,915.46	6,359.82	32,000.00	45,000.00	45,000.00	25,000.00	177,147.91	19
				71600	Travel	3,018.89	1,969.27	15,097.64	0.00	1,262.11	0.00	2,000.00	3,500.00	3,500.00	2,000.00	33,347.91	20
				72100	Contractual services-companies	1,556.29	0.00	45,259.26	4,409.12	0.00	19,314.46	14,500.00	12,000.00	12,000.00	5,000.00	114,039.13	21
				74200	Audio Visual & Printing Production Cost	1,653.17	1,020.75	5,756.73	621.94	14,024.42	4,099.95	6,000.00	5,399.21	6,000.00	3,000.00	48,576.17	22
				75700	Training, Workshops and Conferences	184.45	5,233.99	13,816.97	0.00	715.10	5,859.31	20,000.00	15,000.00	15,000.00	6,000.00	78,809.82	23
					GCF Sub-total Output 2	**36,713.06**	**40,280.89**	**133,000.03**	**50,285.28**	**34,275.69**	**59,545.84**	**187,500.00**	**135,899.21**	**141,500.00**	**71,000.00**	**890,000.00**	
					GCF Total Output 2	**36,713.06**	**40,280.89**	**133,000.03**	**50,285.28**	**34,275.69**	**59,545.84**	**187,500.00**	**135,899.21**	**141,500.00**	**71,000.00**	**890,000.00**	
					UNDP (parallel) Co-financing Total Output 2	**317,117.00**	**85,236.14**	**0.00**	**284,460.00**	**1,169,790.00**	**650,000.00**	**200,000.00**	**200,000.00**	**100,000.00**	**65,000.00**	**3,071,603.14**	
					Govt (Ministry of Environment in kind) Co-financing Total Output 2	**17,500.00**	**35,000.00**	**35,000.00**	**35,000.00**	**35,000.00**	**35,000.00**	**17,500.00**	**5,000.00**	**0.00**	**0.00**	**215,000.00**	
					Output 2 Total	**371,330.06**	**160,517.03**	**168,000.03**	**369,745.28**	**1,239,065.69**	**744,545.84**	**405,000.00**	**340,899.21**	**241,500.00**	**136,000.00**	**4,176,603.14**	

Component	Output	Responsible Party	Financing Source	Budget Account Code	Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	TOTAL (USD)	Budget Note
De-Risking and Scaling-up Investment in Energy Efficient Building Retrofits	3. Financial de-risking	MoE	GCF														
				71200	International Consultants	0.00	32,871.46	45,622.52	51,212.83	12,480.00	32,445.00	50,000.00	50,000.00	45,000.00	20,000.00	339,631.81	24
				71300	Local Consultants	9,069.75	33,349.62	34,400.79	76,058.53	127,564.60	94,528.58	110,000.00	60,000.00	50,000.00	25,000.00	619,971.87	25
				71400	Contractual services-individuals	0.00	25,327.69	43,551.98	29,295.63	33,646.35	39,594.11	37,000.00	90,000.00	90,000.00	40,000.00	428,415.76	26
				71600	Travel	253.32	4,862.87	8,270.22	5,070.68	7,767.12	7,782.98	15,000.00	15,000.00	15,000.00	8,000.00	87,007.19	27
				72100	Contractual services-companies	136,274.27	21,918.05	458,734.93	247,316.76	114,000.17	280,569.96	160,000.00	80,000.00	80,000.00	35,000.00	1,613,814.14	28
				74200	Audio Visual & Printing Production Cost	0.00	989.98	5,419.59	9,094.06	11,266.74	22,777.62	40,000.00	50,000.00	50,000.00	25,000.00	214,547.99	29
				75700	Training, Workshops and Conferences	31,115.66	12,688.97	9,565.06	0.00	410.36	1,368.81	20,000.00	16,462.38	15,000.00	10,000.00	116,611.24	30
					GCF Sub-total Output 3	176,713.00	132,008.64	605,565.09	418,048.49	307,135.34	479,067.06	432,000.00	361,462.38	345,000.00	163,000.00	3,420,000.00	
					GCF Total Output 3	176,713.00	132,008.64	605,565.09	418,048.49	307,135.34	479,067.06	432,000.00	361,462.38	345,000.00	163,000.00	3,420,000.00	
					Govt (Yerevan Municipality) Co-financing Total Output 3	785,258.00	114,742.00	300,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,200,000.00	
					Other (European Investment Bank) Co-financing Total Output 3	0.00	206,724.00	137,816.00	531,401.61	3,405,857.15	3,158,600.00	1,583,919.24	2,300,000.00	2,000,000.00	1,500,000.00	14,824,318.00	
					Output 3 Total	961,971.00	453,474.64	1,043,381.09	949,450.10	3,712,992.49	3,637,667.06	2,015,919.24	2,661,462.38	2,345,000.00	1,663,000.00	19,444,318.00	
	4. Financial incentives	MoE	GCF														
				72100	Contractual services-companies	0.00	0.00	0.00	186,778.17	1,079,338.01	302,755.62	3,789,676.47	3,841,451.73	3,500,000.00	1,300,000.00	14,000,000.00	31
					GCF Sub-total Output 4	0.00	0.00	0.00	186,778.17	1,079,338.01	302,755.62	3,789,676.47	3,841,451.73	3,500,000.00	1,300,000.00	14,000,000.00	
					GCF Total Output 4	0.00	0.00	0.00	186,778.17	1,079,338.01	302,755.62	3,789,676.47	3,841,451.73	3,500,000.00	1,300,000.00	14,000,000.00	
					Govt (Ministry of Finance, Ministry of Territorial Administration, Ministry of Health, Office of Prime Minister) Co-financing Total Output 4	0.00	0.00	0.00	1,360,000.00	806,592.00	1,654,383.62	4,041,770.38	9,000,000.00	8,500,000.00	4,500,000.00	29,862,746.00	
					Govt (Yerevan Municipality) Co-financing Total Output4	0.00	0.00	0.00	980,000.00	2,200,000.00	8,006,713.80	809,286.20	1,500,000.00	1,700,000.00	700,000.00	15,896,000.00	
					Other (EDB/R2E2 Fund) Co-financing Total Output 4	0.00	0.00	0.00	0.00	0.00	0.00	722,479.00	1,200,000.00	1,200,000.00	0.00	3,122,479.00	
					Other (ADB/Armenian Territorial Defevolment Fund) Co-financing Total Output 4	0.00	0.00	0.00	0.00	0.00	0.00	2,037,777.00	2,400,000.00	2,600,000.00	2,000,000.00	9,037,777.00	
					Other (WB/Ministry of Education PIU) Co-financing Total Output 4	0.00	0.00	0.00	0.00	0.00	0.00	80,000.00	1,000,000.00	1,120,000.00	0.00	2,200,000.00	
					Other (Armenian Representation of AGBU) Co-financing Total Output 4	0.00	0.00	0.00	0.00	0.00	0.00	843,069.00	0.00	0.00	0.00	843,069.00	
					Other (Local Banks) Co-financing Total Output 4	0.00	0.00	0.00	0.00	0.00	0.00	320,000.00	750,000.00	750,000.00	0.00	1,820,000.00	
					Output 4 Total	0.00	0.00	0.00	2,526,778.17	4,085,930.01	9,963,853.04	12,644,058.05	19,691,451.73	19,370,000.00	8,500,000.00	76,782,071.00	

Component	Output	Responsible Party	Financing Source	Budget Account Code	Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	TOTAL (USD)	Budget Note
De-Risking and Scaling-up Investment in Energy Efficient Building Retrofits	5. Project Management	UNDP	GCF														
				71400	Contractual services-individuals	12,477.97	45,217.84	25,813.49	19,450.45	24,165.43	28,670.80	35,000.00	52,000.00	52,000.00	35,000.00	329,795.98	32
				71600	Travel	116.96	0.00	0.00	0.00	0.00	0.00	10,000.00	7,000.00	7,000.00	3,000.00	27,116.96	33
				72400	Communication & Audio Visual Equipment	817.23	3,312.63	786.94	3,998.16	748.72	1,486.92	7,000.00	3,000.00	3,000.00	2,500.00	26,650.60	34
				72800	Information Technology Equipment	1,430.06	563.15	2,358.69	819.19	3,011.98	3,643.40	6,000.00	5,000.00	5,000.00	3,000.00	30,826.47	35
				74596	Services to Projects - GOEs	12,094.12	10,276.35	12,459.95	11,642.46	8,647.43	13,583.39	73,000.00	61,296.30	62,000.00	40,000.00	305,000.00	36
				75700	Training, Workshops and Conferences	3,745.14	5,310.30	20.84	0.00	541.33	1,541.33	20,000.00	17,451.05	17,000.00	15,000.00	80,609.99	37
					GCF Sub-total Output 5	30,681.48	64,680.27	41,439.91	35,910.26	37,114.89	48,925.84	151,000.00	145,747.35	146,000.00	98,500.00	800,000.00	
		UNDP	Accredited Entity														
				71200	International Consultants	0.00	0.00	0.00	14,893.45	8,788.00	0.00	0.00	0.00	0.00	20,000.00	43,681.45	38
				71400	Contractual services-individuals	0.00	14,927.77	11,526.66	11,215.64	10,842.49	12,673.57	16,000.00	16,000.00	16,000.00	8,000.00	117,186.13	39
				72100	Contractual services-companies	0.00	42.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.61	40
				72400	Communication & Audio Visual Equipment	0.00	246.85	1,148.99	2,326.63	2,614.48	5,291.53	0.00	0.00	0.00	0.00	11,628.48	41
				72500	Supplies	0.00	404.60	1,007.01	1,033.57	441.06	252.31	0.00	0.00	0.00	0.00	3,138.55	42
				74100	Professional Services	0.00	0.00	0.00	0.00	0.00	4,372.65	0.00	0.00	0.00	0.00	4,372.65	43
				74200	Audio Visual & Printing Production Cost	0.00	1,520.75	969.70	640.00	1,721.97	554.53	0.00	0.00	0.00	0.00	5,406.95	44
				74500	Miscellaneous Expenses	0.00	5,737.86	3,935.43	2,360.20	1,952.32	8,077.43	4,979.94	3,000.00	3,000.00	1,500.00	34,543.18	45
					UNDP Co-financing Sub-total Output 5	0.00	22,880.44	18,587.79	32,469.49	26,360.32	31,222.02	20,979.94	19,000.00	19,000.00	29,500.00	220,000.00	
					GCF Total Project Management Cost	30,681.48	64,680.27	41,439.91	35,910.26	37,114.89	48,925.84	151,000.00	145,747.35	146,000.00	98,500.00	800,000.00	
					Accredited Entity Co-financing Total Project Management Cost	0.00	22,880.44	18,587.79	32,469.49	26,360.32	31,222.02	20,979.94	19,000.00	19,000.00	29,500.00	220,000.00	
					ovt (Ministry of Environment, In Kind) Co-financing Total Project Management Cost	7,500.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	7,500.00	2,500.00	0.00	0.00	92,500.00	
					Project Management Cost Total	38,181.48	102,560.71	75,027.70	83,379.75	78,475.21	95,147.86	179,479.94	167,247.35	165,000.00	128,000.00	1,112,500.00	
					Grand Total - GCF	244,107.54	292,572.34	811,510.92	731,109.67	1,466,801.30	994,939.08	4,786,814.47	4,658,644.68	4,295,500.00	1,718,000.00	20,000,000.00	
					Grand Total - UNDP Co-financing	358,116.98	109,915.79	35,057.17	331,711.26	1,239,404.88	714,812.61	257,084.45	232,000.00	119,000.00	94,500.00	3,491,603.14	
					Grand Total - Govt Co-financing	817,758.00	179,742.00	365,000.00	2,405,000.00	3,071,592.00	9,726,097.42	4,883,556.58	10,510,000.00	10,200,000.00	5,200,000.00	47,358,746.00	
					Grand Total - Other Co-financing	0.00	206,724.00	137,816.00	531,401.61	3,405,857.15	3,158,600.00	5,587,244.24	7,650,000.00	7,670,000.00	3,500,000.00	31,847,643.00	
					GRAND TOTAL - PROJECT	1,419,982.52	788,954.13	1,349,384.09	3,999,222.54	9,183,655.33	14,594,449.11	15,514,699.74	23,050,644.68	22,284,500.00	10,512,500.00	102,697,992.14	

Budget Note	Budget Account Description	Description of cost items
1	International Consultants	• International technical advisor support in localization of the international requirements for the MRV system • Supporting initiatives, including coordination with planned and parallel activities led by UNDP
2	Local Consultants	• Short-term local consultants hired to: collect and analyze information on institutional needs and capacity for implementation of commitments under convention, describe education, public awareness, capacity building, constraints and gaps • Short-term local consultants to identify capacity needs for technology transfer
3	Contractual services-individuals	Expert team assistant to provide technical support to national and international experts, responsible for collection, compilation and editing technical reports, including training kits and fact sheets. Regular updates and drafting materials for communications
4	Contractual services-companies	• Local company for establishment of the MRV system related arrangements • Local company for MRV system information dissemination • Local company for developing and managing the website and advisory/information related to EE-specific portal
5	Equipment and Furniture	Purchase of EMIS-related equipment, vehicle for EMIS equipment
7	Communication & Audio Visual Equipment	Communication costs - internet, telephone. The project will purchase internet access and cover connectivity charges, purchase monitors and computers, and will include servers (for the MRV database). The MRV database will be established at the Ministry of Environment and will require specific capacity servers meeting the requirements to host the database and link with the municipalities.
8	Information Technology Equipment	Information technology supplies, which includes acquisition of technology hardware (hard disks, expansion disks), software and supplies (including printing supplies) related to establishing and operationalizing the building sector MRV
9	Rental & Maintenance of Info Tech Equip	Costs related to maintenance and operation of office and transportation equipment
10	Audio Visual & Printing Production Cost	Translation, interpretation, publication, small video production, ads (hardcopy, videos, TV). All reports will be made available in national language and English. Trainings, workshops and conferences will include interpretation as appropriate to the stakeholders/recipients.
11	Miscellaneous Expenses	Miscellaneous Expenses
12	Training, Workshops and Conferences	Organization/participation in meetings, workshops, stakeholder consultations for establishment of reliable, transparent MRV system for overall project and each site-specific data
13	Contractual services-individuals	Short-term local consultants to identify capacity needs for technology transfer
14	Travel	Travel costs for in and out of country travel for international and national consultants
15	Contractual services-companies	Supporting initiatives, including coordination with planned and parallel activities led by UNDP
16	Training, Workshops and Conferences	Supporting initiatives, including coordination with planned and parallel activities led by UNDP related to knowledge management, information transfer
17	International Consultants	• International consultant for Localization of international best practice • International consultant for supporting the development of the exit strategy
18	Local Consultants	• Long term local technical support for de-risking initiatives • Local consultant for supporting the development of the exit strategy

19	Contractual services-individuals	• Project manager to share expert task (40%) to provide expert backstopping on the legal/institutional enabling framework for the retrofit activities in public and residential buildings • Consultants for development of legal-regulatory package • Consultants for legal advice
20	Travel	Travel costs for in and out of country travel for international and national consultants
21	Contractual services-companies	Local companies for development of legal-regulatory package
22	Audio Visual & Printing Production Cost	Translation, interpretation, publication, small video production, ads (hardcopy, videos, TV). All reports will be made available in national language and English. Trainings, workshops and conferences will include interpretation as appropriate to the stakeholders/recipients.
23	Training, Workshops and Conferences	Organization/participation in meetings, workshops, stakeholder consultations
24	International Consultants	• International consultant for assisting the team with on-call advice • Support to public building EE retrofits • Assisting of implementation of public buildings' energy efficiency financing • International consultants to develop marketing platform
25	Local Consultants	• Support for development of financial instruments for individual households • Development of business plans for project stakeholder HoAs • Development of verification and validation related activities • National consultants to work on implementation of public building energy efficiency financint • Local consultant to develop marketing platform
26	Contractual services-individuals	• Financial consultant to be hired under service contract modality • Local adviser on energy audit • Local adviser on EE finance • Project consultant on PR, outreach and marketing platform
27	Travel	Travel costs for in and out of country travel for international and national consultants
28	Contractual services-companies	• Local companies for development of marketing products • Local companies for development of de-risking schemes • Development of energy audits • Development of financial instruments • Local companies to support marketing platform implementation
29	Audio Visual & Printing Production Cost	Translation, interpretation, publication etc. related costs. The preparation of financial documentation and review of international documentation will require translation. This will require specialized translators and interpreters, with higher specific costs. Further, the project will be producing manuals (which will include both translation and printing costs).
30	Training, Workshops and Conferences	Costs associated with organization/participation in meetings, workshops, stakeholder consultations
31	Contractual services-companies	Co-financing provided to Responsible Parties for energy efficient building retrofits as per Operational Manuals, approved by the GCF.
32	Contractual services-individuals	Project Manager
33	Travel	Travel costs for in and out of country travel for international and national consultants
34	Communication & Audio Visual Equipment	Communication costs -- internet, telephone
35	Information Technology Equipment	Office IT equipment

36	Training, Workshops and Conferences	Costs associated with organization/participation in meetings, workshops, stakeholder consultations. Training will be provided on project management, reporting and related learning costs (e.g. tax requirements, procurement rules). This will not be used for UNDP internal costs.
37	UNDP DPC Staff	Direct project costs – support services. For full details see UNDP Project Document
38	International Consultants	International consultants hired to undertake the mid-term review and final evaluations
39	Contractual services-individuals	Driver
40	Contractual services-companies	Contractual services- Social surveys among the benefisiaries, trainings, workshops etc.
41	Communication & Audio Visual Equipment	Communication costs -- internet, telephone
42	Supplies	Stationery and other office supplies
43	Professional Services	Professional fees for project financial audits
44	Audio Visual & Printing Production Cost	Office communication expenses
45	Miscellaneous Expenses	Miscellaneous Expenses

B. Disbursement Plan

Disbursements	GCF proceeds, (USD)	Indicative expected date of disbursement
Disbursement 1	729,000	Disbursed
Disbursement 2	1,608,000	Disbursed
Disbursement 3	3,596,000	Disbursed
Disbursement 4	2,400,000	Disbursed
Disbursement 5	3,600,000	30 March 2024
Disbursement 6	5,500,000	30 January 2025
Disbursement 7	2,567,000	30 May 2025
Total	20,000,000	

Schedule 3. Implementation Arrangements

The Implementation Arrangements for the Funded Activity are included in the Funding Proposal attached herein as Annex 1, as amended by this Schedule 3

The building types and targets as per the FP are revised as follows:

(Please see annex 8)	Number of buildings			Average cost per retrofit (USD)			Average level of grant (%)			Average grant per building (USD)			Total amount of GCF grant (million USD)			Total investment (million USD)		
	FP	2020[1]	2023	FP	2020	2023	FP	2020	2023	FP	2020	2023	FP	2020	2023	FP	2020	2023
Public buildings - technical package 1 (full retrofit)[a]	23	20	103	250,000	250,000	300,000	5%	20%	20%	12,500	50,000	60,000	0.287	1.0	6.18	5.75	5.0	30.9
Public buildings - technical package 2 (simple retrofit)[a]	150	200	202	95,000	160,000	115,000	8%	10%	10%	7,600	16,000	11,500	1.14	3.2	2.32	14.25	32.0	23.2
MABs[2]	290	-	-	112,430	-	-	22%	-	-	24,735	-	-	7.173	-		34.8	-	-
MABs under state subsidy programme	-	319	188	-	109,630	110,000	-	25%	25%	-	27,408	27,500	-	8.7	5.17	-	35.0	20.7
MABs not eligible for state subsidy	-	40	10	-	109,630	140,000	-	20%	20%	-	21,926	28,000	-	0.9	0.28	-	4.4	1.4
Single-family homes	6,000	200	200	10,000	10,000	10,000	9%	9%	9%	900	900	900	5.4	0.2	0.18	60.0	2.0	2.0
Total	**6,463**	**779**	**703**										**14.0**	**14.0**	**14.1**	**114.8**	**78.4**	**78.2**

[1] Figures presented under the 2020 columns are from the Refocus Analysis prepared for this Project in 2020.

[2] The numbers are now reconciled to remove the discrepancy that appears in the FP which originally exceeded the approved grant

	Number of buildings			GHG reduction (tCO_2 / year)			Number of beneficiaries		
	FP	**2020**[3]	**2023**	**FP**	**2020**	**2023**[4]	**FP**	**2020**	**2023**
Public buildings - technical package 1 (full retrofits)	23	20	103	4,184	3,639	24,001	23,000	20,000	103,000
Public buildings - technical package 2 (simple retrofit)	150	200	202	12,072	26,099	19,037	105,000	140,000	141,400
Multi-family apartment buildings	290	-	-	19,491	-	-	52,200	-	-
MABs under state subsidy programme	-	319	188	-	33,544	11,721	-	57,420	33,840
MABS not eligible for state subsidy	-	40	10	-	3,165	791	-	7,200	1,800
Single-family homes	6,000	200	200	23,087	364	364	30,000	1,000	1,000
Total	**6,463**	**779**	**703**	**58,834**	**66,810**	**55,914**	**210,200**	**225,620**	**281,040**

[3] Figures presented under the 2020 columns are from the Refocus Analysis prepared for this Project and submitted to GCF in 2020.

[4] GHG reduction presented under the column 2023 is now recalculated as per request of GCF, using the conservative approach between the Ex-Ante and Ex-post data available.

Schedule 4. Reporting

A. Reporting Period

The Reporting Period for the Project shall be from the Effective Date to the Completion Date ("**Reporting Period**").

B. Project calendar/milestones

Milestones	Expected Timing
Start of Project Implementation	Effective Date
Inception Report (including assessment of baselines)	Within six (6) months after the Effective Date
Interim Independent Evaluation Report	Within three (3) months after Year three (3) from the Effective Date
Project Completion Report (Final APR)	Within three (3) months after the Completion Date
Final Independent Evaluation Report	Within six (6) months after the Completion Date

Schedule 5. Implementation Plan

LEGEND

X = COMPLETED

X = INITIATED

X = NOT YET INITIATED

TASK	2017		2018				2019				2020				2021				2022				2023				2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q3 2	Q3 3	Q3 4	Q3 5	Q3 6	Q3 7	Q3 8
Output 1.1 MRV systems in the buildings sector in Armenia established		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.1.1 MRV framework		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.1.2 EMIS implementation					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 1.2 Knowledge management and MRV information disseminated		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
1.2.1 Stakeholder engagement		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
1.2.2 Website			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
1.2.3 Formats for dissemination		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
1.2.4 Information provision							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Output 2.1 Public instruments for the promotion of investment in EE selected		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						

TASK	2017		2018				2019				2020				2021				2022				2023		2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q3 2	Q3 3	Q3 4	Q3 5	Q3 6	Q3 7	Q3 8
2.1.1 Public instrument selection		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Output 2.2 Support provided to on-going legal reform in the field of EE			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.2.1 Support to authorities			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.2.2 Introduction of legislation					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.2.3 Public building legislation							X	X	X	X	X														X	X	X	X	X	X	X	X	X	X	X	X
Output 2.3 Support provided for the creation of an enabling policy framework for EE retrofits in multi-owner residential buildings		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.3.1 Support for HOAs		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 2.4 Support provided to building owners / managers / owner associations / ESCOs on legal matters related to EE retrofit projects							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
2.4.1 Support for multi-owner buildings							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
2.4.2 ESCOs							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				

Task	2017		2018				2019				2020				2021				2022				2023				2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q3 2	Q3 3	Q3 4	Q3 5	Q3 6	Q3 7	Q3 8
Output 2.5 Exit strategy implemented													X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.5.1 Exit strategy													X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.1 Technical assistance provided to banks and other financial institutions		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.1.1 Market facilitation		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.2 Technical assistance for HOA market facilitation provided to banks		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.2.1 Support to banks		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.3 Technical assistance provided to local government to develop EE retrofit projects for publicly owned buildings		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.3.1 Publicly-owned buildings		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.4 Access to affordable capital for EE retrofits provided			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.4.1 Technical structure for financial instruments			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.4.2 Verification							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TASK	2017		2018				2019				2020				2021				2022				2023		2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q3 2	Q3 3	Q3 4	Q3 5	Q3 6	Q3 7	Q3 8
Output 3.5 Marketing platform created			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
3.5.1 Marketing support			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Output 4.1 Targeted financial incentives provided to vulnerable groups to help address the affordability gap							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.1.1. Targeted incentives							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Environmental and Social Safeguards	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Implementation of Gender Action Plan				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inception report (including baselines assessment	X	X	X																															
First Annual Project Report (APR)			X																															
Interim Independent Evaluation Report													X	X																				
Project Completion Report (last APR)																																		X	
Final Independent Evaluation Report																																				X
Project Board meetings	X				X									X				X				X		X					X				X		

Schedule 6. Request for Disbursement

[UNDP'S LETTERHEAD]

Green Climate Fund
175, Art Center-daero
Yeonsu-gu, Incheon 22004
Republic of Korea
Attn: [CFO]

[DATE]

Ref: Request for Disbursement – Funded Activity Agreement – Funded Activity: FP010 "De-risking and scaling up investment in energy efficient building retrofits" – Request for Disbursement [No. [____]]

Ladies and Gentlemen:

1. Reference is made to the Funded Activity Agreement dated as of [DATE] (the "Agreement") between the United Nations Development Programme (the "Recipient") and the Green Climate Fund ("GCF"). Capitalized terms used but not defined in this request have the meanings assigned to them in the Agreement. The rules of interpretation set forth in Clause 1 of the Agreement shall apply to this request.
2. The Recipient irrevocably requests disbursement on [DATE] (or as soon as practicable thereafter) of:
   (a) the amount of [_____] USD under the Agreement (the "Disbursement"), in accordance with Clause 3 of the Agreement, to be transferred to the GCF Account – Account No. _____, [SWIFT/ABA] at [name and address of bank] in [city/country]; and
   (b) the amount of [_____] USD as payment of the Accredited Entity Fee, in accordance with Clause 4 of the Agreement, to be transferred to the Account No. _____, [SWIFT/ABA] at [name and address of bank] in [city/country].
3. The Recipient certifies that all applicable conditions precedent set forth in Clause 8 of the Agreement have been satisfied.
4. The Recipient further certifies that the proceeds of all Disbursements shall be applied only for the purpose described in Clause 3 of the Agreement.
5. The above certifications are effective as of the date hereof and shall continue to be effective as of the date of disbursement for this Disbursement. If any certification is no longer valid as of or prior to such Disbursement, the Recipient will notify GCF immediately and, on demand, repay the Disbursement (or any portion thereof) if the Disbursement is made prior to GCF's receipt of such notice.
6. The Recipient acknowledges hereby that the total amount of funds disbursed:
   (a) as Grant under the Agreement up to the current date, without considering the funds to be disbursed under this request, is [_____] USD; and
   (b) as Accredited Entity Fee under the Agreement up to the current date, without considering the funds to be disbursed under this request, is [_____] USD.

Yours truly,
UNDP

By: _____
Authorized Representative

By: _____
Authorized Representative

Schedule 7 – revised logic framework

H.1.2. Outcomes, Outputs, Activities and Inputs at Project/Programme level							
Expected Result	**Indicator**	**Means of Verification (MoV)**	**Baseline**	**Target** Mid-term (if applicable)	**Target** Final	**Assumptions**	***Status update***
Project/programme Outcomes	**Outcomes that contribute to Fund-level impacts**						
M5.0 Strengthened institutional and regulatory systemsM5.0 Strengthened institutional and regulatory systems	5.1 Institutional and regulatory systems that improve incentives for low-emission planning and development and their effective implementation (outcome indicator for Component 2)	Score on World Bank RISE indicators for building sector	34	64	91	Strengthened institutional and regulatory systems lead to practical change and do not remain on paper	***No changes***
M7.0 Lower energy intensity of buildings, cities, industries and appliancesM7.0 Lower energy intensity of buildings, cities, industries and appliances	7.1 Energy intensity / improved efficiency of buildings, cities, industries and	Reported data from project monitoring component	**Residential buildings: 185 kWh / m2 per an** **Public buildings: 200 kWh / m2 per an**	-	Reduced by 50%	Rebound effect due to lower energy intensity is limited	***This target was based at the project design stage on the limited statistical data available at the period of the Project design. However, by the time of refocus analysis in 2020 more enhanced statistics was available and thus it was decided to reflect updated baseline data in here to be closer to reality.***

Robust MRV for the building sector established (Component 1 – Establishment of building sector MRV and knowledge management)	Establishment of a web-based, publicly-accessible MRV database	Project reporting	No MRV in place	Website establish- ed and fully web-accessible	5,000 website hits per year	MRV systems continue producing data after project end	***No changes***
National, sub-national and local authorities adopt and implement an enabling policy framework for EE retrofits (Component 2 – Policy de-risking)	See indicator 5.1 above						***No changes***
Access to affordable capital for EE retrofits provided (Component 3 – Financial de-risking)	Value of loans for building renovation provided	Reported data from project monitoring component	0	US$ 22m	US$ 100m	The Government continues to bring energy prices in line with market prices Level of skills among local professionals is maintained at a level that can support market growth Lenders make use of learning opportunities offered by the financial mechanisms supported in this project	***No changes***
Affordability of EE retrofits for most vulnerable households ensured through targeted financial incentives to building / apartment	Number of vulnerable beneficiaries (lowest quintile of household income)	Applications submitted for the financial incentives scheme	0	15,000	50,000	Targeted financial incentives are aligned with the capital provided for EE retrofits, effectively leading	***No changes***

owners / ESCOs (Component 4 – Financial incentives)	with improved building EE					to the implementation of retrofits	
Project/programme outputs	**Outputs that contribute to outcomes**						
1.1 MRV systems for the buildings sector in Armenia established	Development and coverage of MRV system and database	Regular project reporting	N/A	Developed & in use for renova-ted buildings: full coverage of buildings retrofitted in this project	Developed & in use for renova-ted buildings: full coverage of buildings retrofitted in this project	Building occupants cooperate with the implementation of MRV systems	***No changes***
1.2 Knowledge management and MRV information disseminated	Number of beneficiaries with access to knowledge about energy use in buildings, opportunities and financing for EE	Regular project reporting	N/A	Number of benefi-ciaries: 50,000	Number of beneficiaries: 250,000	Learning opportunities offered by this project lead to sustained lending for EE investments	***No changes***
2.1 Public instruments for the promotion of investment in EE selected	UNDP's framework to support policy-makers in selecting public instruments to promote energy efficiency investment in developing countries used, adapted as necessary	Report on implementation of the framework	Frame- work not used for EE in Armenia	Number of public instru-ments selected: 3	Number of public instru-ments selected: 3	Policymakers follow through on implementation of the selected instruments	***No changes***
2.2 Support provided to on- going legal reform in the field of EE	Binding legislation on building codes and adequate secondary legislation adopted.	National legislation	Level 3. Policies proposed and consultation ongoing.	Level 4. Strong policy adopted	Level 5. Strong policy adopted and institutional capacity streng-thened	UNDP's working relationship with the Government is effectively employed to maintain the momentum for legal reform	***No changes***

2.3 Support provided for the creation of an enabling policy framework for EE retrofits in multi-owner residential buildings	Adequate secondary legislation providing a clear and effective set of functional models and a standard set of rules for multi-owner building management bodies to undertake EE retrofits developed, introduced and enforced	National legislation	Secondary legislation lacking	Level 6. Sub-sector plans reflect key policy targets	Level 7. Regula tory frame- work developed	UNDP's working relationship with the Government is effectively employed to maintain the momentum for creation of an enabling policy framework	***No changes***
2.4 Support provided to building owners / managers / owner associations / ESCOs on legal matters related to EE retrofit projects	Business models for repayment of EE investments implemented	Regular project reporting	Level 1. No business models for repayment of EE invest-ments in buildings in place	Level 3. Strong proposal defined with buy-in from stakeholders confirmed	Level 5. Financial mecha-nism in operation with evidence of stability	Gradual introduction of performance- based contracts and risk transfer to ESCOs, combined with capacity building, lead to the development of an ESCO market	***No changes***
2.5 Exit strategy measures implemented	Additional exit strategy measures designed and implemented	Regular project reporting	N/A	Additional exit strategy measures designed	Additional exit strategy measures implemented	Exit strategy succeeds in maintaining the momentum created by the project and leads to local stakeholders continuing to further develop the market	***No changes***
3.1 Technical assistance provided to banks and other financial institutions	Capacity of banks to develop and market products for energy efficiency retrofits in individual houses	Survey of bank employees	Banks do not have the capacity to develop and market products for energy	2 Armenian banks have the capacity to develop and market products for energy efficiency	4 Armenian banks have the capacity to develop and market product s for energy	Banks are interested and participate in capacity building to enable them to deliver EE projects in individual houses	***No changes***

			efficiency retrofits in individual houses	retrofits in individual houses	efficiency retrofits in individual houses		
3.2 Technical assistance for HOA market facilitation provided to banks	Capacity of banks to develop and market products for energy efficiency retrofits in multi-owner residential buildings	Survey of bank employees	Banks do not have the capacity to develop and market products for energy efficiency retrofits in multi- owner residential buildings	2 Armenian banks have the capacity to develop and market products for energy efficiency retrofits in multi- owner residential buildings	4 Armenian banks have the capacity to develop and market product s for energy efficiency retrofits in multi- owner residential building s	Banks are interested and participate in capacity building to enable them to deliver EE projects in multi-owner residential buildings	***No changes***
3.3 Technical assistance provided to local government to develop EE retrofit projects for publicly- owned buildings	Percentage of local government employees in Armenia who believe they have the capacity to develop EE retrofit projects for publicly-owned buildings	Survey of local government employees	Local govern-ment does not have the capacity to develop EE retrofit projects for publicly-owned buildings	50% of local govern- ment emplo- yees believe local govern- ment has the capacity to develop EE retrofit projects for publicly-owned buildings	80% of local govern- ment employ- ees believe local govern- ment has the capacity to develop EE retrofit projects for publicly-owned buildings	Local government is interested and participates in capacity building to enable it to deliver EE projects in public buildings	***No changes***
3.4 Access to affordable capital for EE retrofits provided	Amount and number of loans for building renovation provided	Reported data from project monitoring component	No lending provided	US$ 20 million	US$ 80 million	Economic situation continues to improve	***This figure includes the loan from EIB phase 1 (~USD 14.8 mln), as well as other loans committed by new co-financiers.***

3.5 Marketing platform created	Marketing materials developed and platform created	Marketing materials, project reporting	No market ing materials exist	Marketing materials created and disseminated to at least 5,000 stake- holders	Marketing platform created and disse- minated to at least 25,000 stakeholders	Marketing campaign successfully raises awareness of the opportunities offered by building EE retrofits	***No changes***
4.1 Targeted financial incentives provided to vulnerable groups to help address the affordability gap	Financial mechanism to provide targeted financial incentives in place and incentives provided	Reported data from project monitoring component	No incentives in place	Incentives provided to 15,000 beneficiaries	Incentives provide d to 50,000 beneficiaries	Sufficient uptake of the financial incentive among the target market of vulnerable homeowners	***No changes.***
	Number of public buildings that receive a financial incentive for energy efficient retrofits, including area (m2)			-	103 Public buildings - technical package 1 (full retrofits)		***Commitments received from new co-financiers of the project (ADB, EDB) as well as Government's new commitments for the years 2023-2025 show large number of public buildings planned for the deep EE retrofits. (Please see annex 5)*** ***The number of buildings for final target increased from 20 (as per FP) to 103. Changes are based on the Refocus Analysis, (prepared and provided to the GCF in 2020), as well as commitments from the Project partners and envisaged cooperations.***
	Number of public buildings that receive a financial incentive for energy efficient retrofits, including area (m2)			-	202 Public buildings - technical package 2 (simple retrofits)		

Number of residential buildings that receive a financial incentive for energy efficient retrofits, including area (m2)	-	10 MABS not eligible for state subsidy	***The target has slightly increased from 200 to 202. The target has decreased from 40 to 10. This is linked to partnership with Municipality of Yerevan and their commitment to co-finance EE retrofits in 10 MABs. (Please see annex 5)***
Number of residential buildings that receive a financial incentive for energy efficient retrofits, including area (m2)	-	188 MABs under state subsidy programme	***(Please see annex 5) The number decreased from 319 to 188. Decrease is linked to overall dynamic of MAB retrofits in the frames of State Subvention Programme for the last 2 years: Priorities have slightly been changed in local communities after COVID and war, showing somewhat decrease in EE retrofits of MABs***
Number of single-familty houses that receive a financial incentive for energy efficient retrofits, including area (m2)	-	200 Single-family individual buildings	***The new target decreased from 6,000 to 200 (and was agreed in 2020 when* Refocus *Analysis was submitted to GCF).***

Activities	Description	Inputs	Description	*Status updates*
1.1.1 MRV framework	Development of the MRV framework, including guidelines and monitoring methodologies for the various categories of buildings	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to develop MRV framework in conjunction with the project team	***No changes***
1.1.2 EMIS implementation	Support to full implementation of building EMIS in targeted buildings for demonstration and capacity building purposes	Software International consultants, Local consultants, PMU staff time, Funds	Following competitive tender and based on detailed technical specifications, Ministry of Environment financially supported for the purchase of EMIS systems	***No changes***
1.2.1 Stakeholder engagement	Identifying appropriate formats for reaching the relevant stakeholders	International consultants, Local consultants, PMU staff time, Funds	Specialist communications consultants engaged to develop communications strategy	***No changes***
1.2.2 Website	Establishment of a website that will provide information and a platform for communication between the different stakeholders	Web developer, Web hosting	Competitive tender for Web design and implementation	***No changes***
1.2.3 Formats for dissemination	Formats for information dissemination will be developed based on their likely effectiveness for raising awareness, facilitating information access and providing actionable guidance and support to the sector	International consultants, Local consultants, PMU staff time, Funds	Specialist communications consultants assist with the development of informative and accessible literature and other media communications tailored to specific user-groups	***No changes***
1.2.4 Information provision	Provision of information to consumers	Printing and publication costs, international consultants, Local consultants, PMU staff time, Funds	Procurement of design and print services, and development of accessible information products	***No changes***
2.1.1 Public instrument selection	The project will make use of UNDP's framework to support policymakers in selecting public instruments to promote energy efficiency investment in developing countries	Workshops (2) and meetings (15), International consultants, Local consultants, PMU staff time, Funds	Specialist DREI consultants and UNDP staff to assist in instrument selection	***No changes***
2.2.1 Technical specialist support to authorities to adopt and implement an enabling policy framework	Support to national, sub-national and local authorities to adopt and implement an enabling policy framework for EE retrofits.	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to assist in preparation of policies and regulations defining the terms of EE retrofits	***No changes***

2.2.2 Introduction of legislation	Support to the gradual introduction of binding legislation on energy auditing, energy passports / certificates and labelling for existing buildings	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to assist in design and implementation of legislation, and the design and implementation of auditing, passports and labelling	***No changes***
2.2.3 Public building legislation	Support to the introduction of legislation specific to public buildings	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to assist in design and implementation of legislation	***No changes***
2.3.1 Technical support from experts to policy-makers in developing policy related to HOA legal status, payment enforcement and management	Support to policy-makers in developing policy relating to HOA legal status, payment enforcement, professional management and consensus levels	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to advise and develop evidence base for policymakers for development of HOA policy	***No changes***
2.4.1 Legal support to management of multi-owner buildings related to energy efficiency retrofits	Provide support on legal matters related to EE retrofit projects for multi-owner buildings	International consultants, Local consultants, PMU staff time, Funds	Specialist legal support hired on a retainer basis and made available to retrofit projects as and when required	***No changes***
2.4.2 ESCOs	Provide support to establishing ESCOs	International consultants, Local consultants, PMU staff time, Funds	Specialist technical and legal consultants hired to assist with support to ESCO establishment	***No changes***
2.5.1 Exit strategy	Development and implementation of exit strategy	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to advise on design and implementation of post-project impact sustainability measures	***No changes***
3.1.1 Technical support provided to banks to develop and market energy efficiency products to individual residences	Provide support to banks to develop and market products for energy efficiency in individual residences	International consultants, Local consultants, PMU staff time, Funds	Technical and financial consultants hired to assist with support to local banks	***No changes***
3.2.1 Technical support provided to banks to develop and market energy efficiency products to multi-owner building management (HOAs)	Support to development of bank products for HOAs	International consultants, Local consultants, PMU staff time, Funds	Technical and financial consultants hired to assist with support to local banks	***No changes***
3.3.1 Publicly-owned buildings	Support to the process of identification, development and aggregation of technically and financially feasible EE retrofit projects in publicly-owned buildings	International consultants, Local consultants, PMU staff time, Funds	Specialist consultants hired to assist with development of screening criteria and aggregation methodologies for EE retrofit projects in public buildings	***No changes***

3.4.1 Technical structure for financial instruments	Establishment and maintenance of the technical structure for the financial de-risking instruments offered	Concessional loans: US$ 86.25 million	Mode of operation of the financial de-risking instruments designed, implemented and documented	***No changes***
3.4.2 Verification	Verification of funded investments	International consultants, Local consultants, PMU staff time, Funds	MRV system designed, implemented and documented	***No changes***
3.5.1 Marketing support	Provide marketing support to banks	Printing and publication costs, international consultants, Local consultants, PMU staff time, Funds	Specialist communications consultants assist with the development of literature and other media communications tailored to specific customer segments	***No changes***
4.1.1 Targeted incentives	Targeted financial incentives provided to building / apartment owners, or the ESCOs serving these clients	Incentives: US$ 14 million	Mode of operation of the financial incentives designed, implemented and funds transferred	***No changes***

Annex 1. Funding Proposal

[Attached]

GREEN
CLIMATE
FUND

Annex 1. Funding Proposal

Funding Proposal

Version 1.0

The Green Climate Fund (GCF) is seeking high-quality funding proposals.

Accredited entities are expected to develop their funding proposals, in close consultation with the relevant national designated authority, with due consideration of the GCF's Investment Framework and Results Management Framework. The funding proposals should demonstrate how the proposed projects or programmes will perform against the investment criteria and achieve part or all of the strategic impact results.

Contents

Note to accredited entities on the use of the funding proposal template

- Sections **A, B, D, E** and **H** of the funding proposal require detailed inputs from the accredited entity. For all other sections, including the Appraisal Summary in section F, accredited entities have discretion in how they wish to present the information. Accredited entities can either directly incorporate information into this proposal, or provide summary information in the proposal with cross-reference to other project documents such as project appraisal document.
- The total number of pages for the funding proposal (excluding annexes) is expected not to exceed 50.

Please submit the completed form to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:
"[FP]-[Agency Short Name]-[Date]-[Serial Number]"

FP-UNDP-220316-5684

A.1. Brief Project / Programme Information			
A.1.1. Project / programme title		De-Risking and Scaling-up Investment in Energy Efficient Building Retrofits	
A.1.2. Project or programme		Project	
A.1.3. Country (ies) / region		Armenia	
A.1.4. National designated authority (ies)		Ministry of Nature Protection	
A.1.5. Accredited entity		United Nations Development Programme	
A.1.5.a. Access modality		☐ Direct ☒ International	
A.1.6. Executing entity / beneficiary		Executing Entity: Ministry of Nature Protection Direct beneficiaries include -30,000 people living in single-family individual buildings and 52,200 in multi-family apartment buildings, including at least 6,000 members of women-headed households; and - 23,000 users of large public buildings and 105,000 users of small public buildings, including at least 90,000 women.	
A.1.7. Project size category (Total investment, million USD)		☐ Micro (≤10) ☐Medium (50<x≤250)	☒Small (10<x≤50) ☐ Large (>250)
A.1.8. Mitigation / adaptation focus		☒ Mitigation	
A.1.9. Date of first submission Date of last submission		30 July 2015 8 April 2016	
A.1.10. Project contact details	Contact person, position	Robert Kelly, Technical Advisor	
	Organization	UNDP	
	Email address	robert.kelly@undp.org	
	Telephone number	+251 91250 3306	
	Mailing address	UNDP – Global Environment Finance Bureau for Policy and Programme Support Kirkos Sub City; Kebele 01, House No. 119 P.O.Box 60130, Addis Ababa Ethiopia	

A.1.11. Results areas *(mark all that apply)*

Reduced emissions from:

- ☐ Energy access and power generation
  (E.g. on-grid, micro-grid or off-grid solar, wind, geothermal, etc.)
- ☐ Low emission transport
  (E.g. on-grid, micro-grid or off-grid solar, wind, geothermal, etc.)
- ☒ Buildings, cities and industries and appliances
  (E.g. new and retrofitted energy-efficient buildings, energy-efficient equipment for companies and supply chain management, etc.)
- ☐ Forestry and land use
  (E.g. forest conservation and management, agroforestry, agricultural irrigation, water treatment and management, etc.)

Increased resilience of:

- ☐ Most vulnerable people and communities
  (E.g. mitigation of operational risk associated with climate change – diversification of supply sources and supply chain management, relocation of manufacturing facilities and warehouses, etc.)
- ☐ Health and well-being, and food and water security
  (E.g. climate-resilient crops, efficient irrigation systems, etc.)
- ☐ Infrastructure and built environment
  (E.g. sea walls, resilient road networks, etc.)
- ☐ Ecosystem and ecosystem services
  (E.g. ecosystem conservation and management, ecotourism, etc.)

A.2. Project / Programme Executive Summary (max 300 words)

1. Armenia is a small, poor, land-locked country in the heart of Eurasia, and is highly vulnerable to the impacts of climate change. Unsustainable energy use in buildings underpins Armenia's closely intertwined development, security and climate-related challenges:

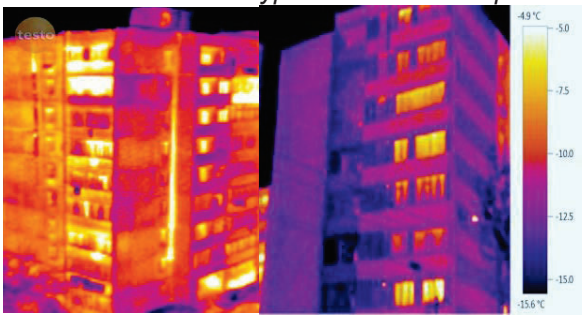
   - Approximately 30% of Armenian households are energy-poor, where energy poverty (often called 'fuel poverty') is defined as households spending more than 10% of their budgets on energy[1].
   - 45% of apartments in multi-family buildings have indoor temperatures in winter below 19°C (i.e. below established international standards for human occupancy).[2,3]
   - 50% of energy use in buildings depends on imported fossil fuels.
   - 24% of CO_2 emissions come from energy use in buildings.
   - Over 50% of energy can be saved via energy efficient retrofits (Figure 1).

2. Improving energy efficiency (EE) in buildings has been assigned the highest priority in Armenia's housing, energy and climate strategies, including the country's Intended Nationally Determined Contribution (INDC), its Third National Communication to the UNFCCC and its UNFCCC Technology Needs Assessment.

3. The project aims at creating a favourable market environment and scalable business model for investment in EE building retrofits in Armenia, leading to sizeable energy savings and GHG emission reductions (up to 5.8 million tCO_2 of direct and indirect emission savings over the 20-year equipment lifetimes), green job creation and energy poverty reduction. It will directly benefit over 200,000 people and catalyse private and public sector investment of approximately US$ 100 million.

[1] This definition of energy poverty, which focuses on energy expenditures relative to income, is sometimes also referred to as fuel poverty, to distinguish it from the broader concept of energy poverty that is also concerned with a lack of access to modern energy services, irrespective of their affordability.
[2] ANSI/ASHRAE Standard 55-2004: 'Thermal environmental conditions for human occupancy'
[3] http://www.nature-ic.am/wp-content/uploads/2014/12/Analytical_Report_2014_ENG-VER-1.pdf, pp. 43-45

Figure 1. EE retrofit of a Typical Panel Multi-Apartment Building in Armenia (Before and After)



Source: Summary of UNDP-GEF Pilot EE retrofit project in Yerevan, Armenia

4. UNDP will work with the Government, city administrations, the European Investment Bank, private sector stakeholders, ESCOs and local banks to deploy the most cost-effective combination of policy and financial de-risking instruments and targeted financial incentives to address market barriers and achieve a risk-return profile for EE building retrofits that can attract private investments.

5. The project builds on UNDP's long experience supporting the Government of Armenia and on UNDP's de-risking framework for low-carbon investment.[4] It has the full backing of Armenia's National Designated Authority (NDA) for the GCF, the UNFCCC National Focal Point, and the Municipality of Yerevan (home to one-third of Armenia's population). The project is fully consistent with Armenia's INDC.

A.3. Project/Programme Milestone	
Expected approval from accredited entity's Board (if applicable)	The project was approved by UNDP Local Project Appraisal Committee (LPAC) on 27 July 2015. See Annex VII.
Expected financial close (if applicable)	Not applicable.
Estimated implementation start and end date	Start: 01/09/2016 (to be confirmed / not before the FAA becomes effective) End: 31/08/2022
Project/programme lifespan	20 years[5]

[4] UNDP (2013), *Derisking Renewable Energy Investment. A Framework to Support Policy-Makers in Selecting Public Instruments to Promote Renewable Energy Investment in Developing Countries*: www.undp.org/drei

[5] The lifespan of the programme, understood to be the period over which direct benefits take place, matches the estimated lifetime of the buildings retrofitted by the project. UNDP is open to supporting post-project implementation and/or monitoring of results during the project lifespan, provided there is more guidance from the GCF Board on what is expected, including details on how many years after project closure this support is to be carried out, and what form it will take. In the context of potential post-implementation project support, UNDP can develop a post-project implementation plan and budget in the fifth year of the project for discussion and approval by the GCF.

B.1. Description of Financial Elements of the Project / Programme

6. The project involves a combination of investment and technical assistance. For investment (Component 4), GCF financing in the amount of US$ 14 million is being requested to address the needs of vulnerable households and remove financial barriers by making loans for EE building retrofits more affordable.[6] This will be complemented by US$8 million in co-financing from the Municipality of Yerevan. For technical assistance (Components 1, 2 and 3, and for Project Management) the requested GCF funding is US$ 6 million to remove market and policy barriers to EE building retrofits, and the co-financing will be provided by the Ministry of Nature Protection (MoNP) in the amount of US$ 0.4 million and the accredited entity, UNDP - US$ 1.42 million (See overview of project financing structure in the table below).

Component	Financiers	Required financing (MUSD)
Investment	GCF	14.000
	Yerevan Municipality	8.000
	Sub-total	*22.000*
Technical Assistance	GCF	6.000
	UNDP	1.420
	MoNP	0.400
	Sub-total	*7.820*
Total Project Cost		**29.820**

7. In addition, the project has a potential to leverage a sizeable volume of additional resources. To maximize this potential, UNDP is working closely with the European Investment Bank (EIB) on securing concessional loan for public and residential sector (See Annex IVb and IVe). The EIB is currently in the process of conducting the due diligence process on the potential first phase (EIB loan - US$12 million) that would target public sector buildings. The loan resources for the first phase are expected to be provided upon appraisal in Q3 2016. The potential second phase is subject to further due diligence by EIB and the amount is up to US$86 million. Overall, US$ 20 million of GCF financing is expected to leverage over US$ 80 million of private investment and US$ 20 million of public investment in energy efficiency retrofits.

8. The technical assistance provided in Components 1, 2 and 3 need grants since they address and remove systemic risks and overcome market barriers[7]:

- Component 1 will establish building sector Measurement, Reporting and Verification (MRV) and knowledge management. One of the identified barriers is a lack of information and awareness: energy efficiency is not a major concern for most people in Armenia. There is a low level of awareness among building owners, real estate agencies and occupants about operational costs and potential energy- and money-saving opportunities. There is also a misinformed perception that full compliance with efficient building codes and energy-efficient buildings would be prohibitively expensive in Armenia. The market for EE products and services is immature. Robust MRV will build the investment case for energy efficiency retrofits and, together with the dissemination of information, will support the communication of the financial and development gains to be made from energy efficiency investments, thus improving information availability and awareness of the benefits of buildings with improved energy performance.

- Component 2 will support national, sub-national and local authorities to adopt and implement an enabling policy framework for energy efficiency retrofits. This will remove a number of policy, legal and institutional

[6] The US$ 20 million GCF budget total includes project management costs but excludes the fee of the GCF Accredited Entity (see Section B.3). While not included in this proposal on the instructions by the GCF Secretariat, an additional cost of 9% of the value of the GCF project budget will be necessary to cover quality assurance and oversight services performed by UNDP as a GCF Accredited Entity over all phases of the project cycle. This includes: (i) oversight of proposal development; (ii) appraisal (pre- and final) and oversight of project start-up; (iii) supervision and oversight of project implementation; and (iv) oversee project closure. UNDP awaits confirmation from the GCF Board on this matter and expects that the AE fee, over and above the project cost, will be approved by the GCF Board prior to implementation.

[7] Detailed analysis of systemic risks and market barriers to EE investment in buildings in Armenia - please see Section 1.2 of the UNDP Project Document, pp. 7-17, presented in Annex II.

barriers through supporting legal reform, the introduction and implementation of regulation, and the modernisation and enforcement of standards. Component 2 will also remove technical and capacity barriers by providing technical assistance to selected market players, such as building owners / managers / owner associations and local government.

- Component 3 will provide access to affordable capital for energy efficiency retrofits. This will help remove financial barriers, such as the fact that home-owners and public sector entities lack the financial resources necessary to undertake EE building retrofits without loans and the reluctance of local commercial banks to provide loans for EE renovation.

9. In Component 4, grants from the GCF will be offered as a temporary targeted incentive. They will be targeted and will address the needs of the most vulnerable households. The financial analysis (Annex II[8] and Annex III) shows that, for those earning less than the median household income of US$ 400 per month, building retrofits are not affordable. For middle- and higher-income households, grants are not needed from an affordability point of view, and will only be used at a low level to overcome early-mover barriers. The grants will support poor and vulnerable households to secure access to improved thermal comfort and cost / energy savings. Incentive grants for low-income households are also needed to unlock building-level investments, as these households might otherwise block building-level investment decisions in multi-apartment buildings.

10. Incentives in the form of grants are common in developed countries – both in the EU and USA, sizeable grants are common practice. KfW, for instance, provides loans together with incentive grants for energy efficiency retrofits in Germany of between 7.5 and 22.5%; consequently, the proposed incentive grants in Armenia (in the similar range of 7-22%) can be considered modest (given that median household income in Germany – US$ 2,600 per month[9] – is 6.5 times higher than that of Armenian households). A total of US$ 12.5 million in incentive grants will be used to support vulnerable households in the residential sector.

11. In the public sector, a small incentive (totalling around USD 1.5 million) is needed to provide necessary stimulus to support higher energy efficiency standards than required under 'business as usual'. Also, the market and lending will likely increase much more rapidly with a small grant (up to 5% of investment cost) to incentivise first movers amongst municipalities. The funds will be applied as a grant towards the financing of measures alongside potential lending from EIB and cash investments from the municipality. In addition, the modest incentive will also serve to accelerate the renovation of buildings, thus improving the quality of public facilities such as hospitals and kindergartens servicing the population.

12. The breakdown by component of the GCF funding is given below. For further details on how the financial instruments will address barriers and achieve project objectives, please see Sections E.6 and F.1.

13. *Component 1: Establishment of Building Sector MRV (GCF grant funding US$ 890,000)*. Grant resources will be provided as technical assistance to the relevant national authorities to establish and operationalise MRV systems for the building sector

14. *Component 2: Policy De-Risking (GCF grant funding US$ 890,000)*. GCF grant funding will be used to cover the cost of developing enabling policies for EE retrofits.

15. *Component 3: Financial De-Risking (GCF grant funding US$ 3,420,000)*. GCF grant funding will be used for technical assistance to coordinate the design of financial de-risking instruments with UNDP's partners, and to identify a cost-effective and harmonised set of instruments. GCF grant funding will also be required to support complementary activities that ensure take-up of the financial de-risking instruments by the domestic financial sector.

[8] Feasibility study including detailed technical, economic, financial and GHG analysis of the project is included in the Annex D of the UNDP Project Document on pp. 65-96, which is presented in Annex II to this GCF Funding Proposal. The integrated financial model which underpins this analysis is provided in Annex III to this GCF Funding Proposal.
[9] http://www.oecdbetterlifeindex.org/countries/germany/

16. *Component 4: Financial Incentives (GCF Grant funding US$ 14,000,000)*. GCF grant funding will be used for direct incentives to building owners (primarily residential home / apartment owners). This is necessary to jump-start the market and address the issues of affordability for the upfront cost of EE retrofits, in some cases to improve the IRR of EE retrofit projects and in other cases as a behavioural incentive to stimulate the initial demand from building owners.

Component	Sub-component	Financing institution* (MUS$)			Total (MUSD)	Total /component (MUSD)
		GCF	Govt	UNDP		
Component 1: Establishment of Building Sector MRV	1.1 MRV systems for the buildings sector in Armenia	0,650	0,050	0,303	1,003	1,595
	1.2 Knowledge management and MRV information dissemination	0,240	0,050	0,303	0,593	
Component 2: Policy De-Risking	2.1 Public instruments for the promotion of investment in EE	0,140	0,040	0,121	0,301	1,695
	2.2 Support to ongoing legal reform in the field of energy efficiency	0,200	0,040	0,121	0,361	
	2.3 Support for the creation of an enabling policy framework for EE retrofits in multi-owner residential buildings	0,120	0,040	0,121	0,281	
	2.4 Support to building owners / managers / owner associations / ESCOs	0,280	0,040	0,121	0,441	
	2.5 Exit strategy	0,150	0,040	0,121	0,311	
Component 3: Financial De-Risking	3.1 Technical assistance to banks and other financial institutions	0,850			0,850	11,420
	3.2 Technical assistance to banks for Home-Owner Association (HOA) market facilitation	1,270			1,270	
	3.3 Technical assistance to local government to develop EE retrofit projects for publicly-owned buildings	0,870			0,870	
	3.4 Access to affordable capital for energy efficiency retrofits*		8,000		8,000	
	3.5 Marketing platform	0,430			0,430	
Component 4: Financial Incentives	4.1 Targeted financial incentives provided to vulnerable groups	14,000			14,000	14,000
Project Management	Project Manager, assistant, travel, office running costs and office equipment, meetings of Project Board and Technical Advisory Committee, independent evaluation, financial audit and other project management costs.	0,800	0,100	0,210	1,110	1,110
Total		**20,000**	**8,400**	**1,420**	**29,820**	**29,820**

** In addition to the confirmed co-financing from the Yerevan Municipality, the Ministry of Nature Protection and UNDP, potential parallel financing is expected to come: 1) after the appraisal by EIB – in the first stage: loan for public buildings – US$ 12 million; in the second stage: loan for public and residential buildings –up to 86 million USD – to be appraised in 2016-2017); 2) along with*

an additional US$ 6.75 million from residents / building owners. The amounts for the two stages of EIB loans are subject to EIB's due diligence.
*** Project Management Cost will be incurred first by UNDP (under UNDP's NIM Direct Agency Implementation modality) and, later, by the PIU of the Municipality of Yerevan (once established and operational).*

17. UNDP's currency hedging mechanism is based on matching cash flows (i.e. revenues and expenses) in non-US$ currencies and bank account balances are targeted not to exceed approximately one month's disbursement requirements to minimise risk.

B.2. Project Financing Information

	Financial Instrument	Amount	Currency	Tenor	Pricing
(a) Total project financing	**(a) = (b) + (c)**	29.82	million USD ($)		
(b) Requested GCF amount	(i) Senior Loans (ii) Subordinated Loans (iii) Equity (iv) Guarantees (v) Reimbursable grants (vi) Grants	 20	Options Options Options Options Options million USD ($)	( ) years ( ) years	( ) % ( ) % ( ) % IRR
	Total requested (i+ii+iii+iv+v+vi)	20	million USD ($)		

	Financial Instrument	Amount	Currency	Name of Institution	Tenor	Pricing	Seniority
(c) Co-financing	Grant Grant Grant	8.00 1.42 0.40	million USD ($) million USD ($) million USD ($)	Municipality of Yerevan UNDP[10] Ministry of Nature Protection	( ) years ( ) years	( ) % ( ) % ( ) % IRR	Options Options Options
	Lead financing institution: N/a						
	Confirmation letters from co-financing partners are provided in the Annex IV. The status of co-financing as of December 2015 is the following: *a) Yerevan municipality: co-financing confirmed (Annex IVc).* *b) UNDP: co-financing has been confirmed, consisting of UNDP's TRAC (grant) resources in the amount of US$ 240,000 and US$ 1,000,000 of grant from the UNDP-GEF 'Sustainable Cities' project. This GEF project has been prioritized by the Government of Armenia to receive funding from the Armenian GEF-6 STAR allocation and is currently under development, with an expected starting date in July 2016.* *c) Ministry of Natural Resources (MoNP): co-financing (grant) has been confirmed, see Annex IVd.*						

B.3. Fee Arrangement

[10] UNDP's grant co-financing will be provided in cash.

18. The fee arrangement for the proposed project will be aligned with the GCF Board's decision on fees, taken at the 11th meeting of the Board.

19. The budget figures presented in this proposal exclude the fee: i.e. the resources required to cover quality assurance and oversight services performed by UNDP over all phases of the project cycle as follows: (i) oversight of proposal development; (ii) appraisal (pre and final) and oversight of project start-up; (iii) supervision and oversight of project implementation; and (iv) oversee project closure.

B.4. Financial Market Overview (if applicable)

Not applicable.

C.1. Strategic Context

20. Armenia's Third National Communication to the UNFCCC (2015)[11] identifies public, residential and commercial buildings among the country's top priorities for climate change mitigation: GHG emissions from buildings grew five-fold between 2000 and 2010, from 345 $ktCO_2$ in 2000 up to 1,723 $ktCO_2$ in 2010. Armenia's UNFCCC Technology Needs Assessment[12] (2003) identifies heat supply to buildings as one of the main sources of GHG emissions and as having a large potential for energy saving and emission reduction.

21. Improving energy efficiency (EE) in the building sector has been assigned a high priority in Armenia's climate, energy and housing strategies. In particular, achieving thermal modernisation through energy efficiency retrofits is outlined as a national development priority, particularly for multi-apartment buildings. This is particularly clear in the provisions of the National EE Programme (2007), the National Security Strategy (2007), the Concept for Ensuring Energy Security (2013) and the Energy Security Strategy Action Plan (2014), which all identify the EE potential for the buildings sector and provide outlines of technical measures / solutions to be taken. In addition, the Covenant of Mayors (a 10-city joint agreement) outlines building EE goals. Since 2004, Armenia has been involved in the European Neighbourhood Policy (ENP). The ENP Action Plan was approved in 2006 and is supporting the harmonisation of Armenian legislation, norms and standards with EU EE criteria.

22. Last year, the Government of Armenia and UNDP prepared the 'Energy Efficient Public Buildings and Housing in Armenia NAMA' (2014)[13]. This Nationally Appropriate Mitigation Action (NAMA) will promote energy efficiency in public buildings and social housing, with a particular focus on energy efficiency measures in new construction, capital renovation and in management of public buildings.

23. The general legal-regulatory framework governing energy efficiency in buildings in Armenia was reviewed in 2013 in the report, 'Results of Analysis and Recommendations for Overcoming Barriers to Increased Energy Efficiency in Residential Buildings: Strategy Report, which was one of the outputs of EBRD's 'Armenia - Improving Energy Efficiency in Residential Buildings' Programme. The legal-regulatory framework includes the cross-cutting framework governing energy efficiency in buildings, as well as legislation on construction. The National Programme on Renewable Energy and Energy Efficiency identifies the sectors with the largest energy efficiency potential and proposes 16 categories of energy efficiency measures to be taken to reduce energy use, which includes the building sector[14].

24. Analysis of the World Bank RISE indicators[15] shows that while Armenia has made good progress towards establishing enabling environments for investment in energy efficiency, there is still much room for improvement in the areas of planning and of policies and regulations in the buildings sector.

25. A number of initiatives have targeted energy efficiency retrofits in Armenia, but none of them offer targeted finance for building-level retrofits of multi-owner residential buildings. Furthermore, whilst there are several commercial banks with energy efficiency lending portfolios for SMEs and individual entrepreneurs, the building retrofit sector has not been addressed due to its perceived high risks, such as risks associated with collective decision-making / payment enforcement for multi-owner apartment buildings (detailed analysis of risks and barriers to EE investment in buildings in Armenia is provided in Section 1.2 of the UNDP Project Document, pp. 7-18, presented in Annex II).

C.2. Project / Programme Objective against Baseline

26. **Market Overview.** Achieving thermal modernisation through energy efficiency retrofits in all building sectors is a national development priority, particularly for multi-apartment buildings. Energy efficiency retrofits are targeted by the first NAMA prepared by the country, and will assist cities of Armenia to meet their commitments presented in the INDC, as well as under the Covenant of Mayors initiative to reduce GHG emissions from energy consumption by 20% by 2020. Retrofits will also mitigate the negative social impact of future increases in energy tariffs and increasing

[11] http://www.nature-ic.am/wp-content/uploads/2013/10/1.Armenias-TNC_2015_ENG.pdf, p. 21
[12] http://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/TNR_CRE/e9067c6e3b97459989b2196f12155ad5/19789a07b4de493cb72e43c47fd4db1e.pdf
[13] http://www4.unfccc.int/sites/nama/SitePages/Country.aspx?CountryId=8
[14] Detailed overview of governmental policies, legislation and by-laws on energy efficiency in building sector is presented in Annex II, pp. 12-15
[15] Armenian RISE Indicators are presented on pp. 52-53 (Table 6) in Annex II

energy demand as a result of climate change[16]. Average electricity tariffs for residential customers increased by a factor of 1.8 between 2008-2014, and natural gas tariffs by a factor of 2.6 between 2007-2014. A decision on 17 June 2015 by the Public Services Regulatory Commission to raise electricity prices further by 17-22% led to protests in Yerevan and other cities that are ongoing as of the date of writing (July 2015). The extensive unrest demonstrates the significance of fuel poverty and has raised the issue to the top of the Government's agenda.

27. The buildings sector is one of major energy consumers in Armenia. According to the 2010 GHG inventory, almost 28% of primary energy resources are consumed in buildings, mostly in the residential sector. Globally, GHG emissions from the building sector have more than doubled since 1970 and now represent 19% of all global GHG emissions. Middle-income countries in Eastern Europe & Central Asia (EECA), such as Armenia, account for almost 40% of all non-OECD GHG emissions in the buildings sector[17].

28. Due to Armenia's continental climate, with a long heating season, average winter temperatures around -5°C and winter extremes as low as -42°C, energy consumption and GHG emissions in the Armenian building sector are primarily associated with space heating.

29. One sub-set of buildings with significant energy-saving potential in Armenia are concrete panel multi-storey buildings (Figure 1), of which there are approximately 4,300. In such buildings alone, the energy-saving potential of thermal modernisation is over 1.250 TWh/year, with a GHG reduction potential of 250 $ktCO_2eq$/year, and annual savings of about US$ 63 m (based on gas and electricity tariffs of 2014).

30. Previous projects in Armenia on energy efficiency in buildings have targeted new buildings and energy efficiency retrofits mainly in public sector buildings, whilst residential, commercial and industrial retrofits have been largely overlooked due to the higher levels of financial risk they pose. Furthermore, whilst there are several commercial banks with energy efficiency lending portfolios for SMEs and individual entrepreneurs, the building energy efficiency sector is not addressed. Interest rates for commercial loans are very high (up to 22% per year) and with short repayment periods.

31. **Barriers/Risks**: Due to the presence of policy, financial, market and technical / capacity barriers, the overall investment risk profile of EE building retrofits is prohibitive in Armenia, deterring private and public investment despite the vast potential for highly cost-effective energy-saving and GHG emission reduction opportunities. These barriers are explained in the Section 1.2 of the UNDP Project Document (Annex II to the Funding Proposal). By specifically targeting these barriers and investment risks, the project will contribute towards a commercially-driven EE building retrofit market.

32. **Main goal:** Scale-up investment in EE building retrofits in the cities of Armenia, and reduce the overall investment risk profile of EE building retrofits to encourage private sector investment and alleviate poverty.

33. **Anticipated outcomes:**

- *Component 1 - Establishment of building sector MRV:* Robust MRV for the building sector established
- *Component 2 – Policy de-risking:* National, sub-national and local authorities adopt and implement an enabling policy framework for EE retrofits
- *Component 3 – Financial de-risking:* Access to affordable capital for EE retrofits provided
- *Component 4 – Financial incentives:* Affordability of EE retrofits for the most vulnerable households ensured through targeted financial incentives to building / apartment owners (directly or via private-sector ESCOs)

34. **Expected Impacts:** The overall impacts of the GCF project have been estimated using the data from the technical and financial analysis. The overall impacts are summarised in the tables below and take into consideration a potential leverage.

[16] UNDP (2009), *The Socio-Economic Impact of Climate Change in Armenia*: http://www.am.undp.org/content/dam/armenia/docs/Report%20SOI%20of%20CC.pdf
[17] IPCC (2014), *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*: http://mitigation2014.org

	Average cost per retrofit (US$)	Number of buildings	Total investment (US$)
Single-family individual buildings	10,000	6,000	60,000,000
Multi-family apartment buildings	120,000	290	34,800,000
Public buildings (complex demand- and supply-side renovation, such as for a hospital)	250,000	23	5,750,000
Public buildings (simple demand-side measures, such as for a school)	95,000	150	14,250,000
Total		**6,463**	**114,800,000**

35. The energy savings (in GWh per year) and GHG emissions savings (in tonnes of CO2eq per year) are given in the table below:

	Energy savings (GWh) per year	Monthly financial savings (US$/house-hold or building)*	GHG savings (tonnes) per year	Lifetime GHG savings (20 years)
Single-family individual buildings	110.3	58	27,239	544,783
Multi-family apartment buildings	93.1	26	22,997	459,942
Public buildings (complex demand and supply side renovation, such as for a hospital)	7.7	2,578	5,005	100,093
Public buildings (simple demand side measures, such as for a school)	53.2	992	14,243	284,860
Total	264.3		69,484	1,389,677

* The savings for residential buildings are **per household** and, for public buildings, **per building**. The full savings are only realised after repayment of loans. For a household living in an apartment, the saving of $26 represents 6.5% of median income ($400), and would reduce energy costs from 10.5% to 3.5% of median incomes

36. The project will undertake a number of activities beyond simple investments that will also stimulate the market for energy efficiency in the residential and public building sectors. Therefore, there will be indirect energy savings triggered by investments not within the direct control of the project. These are estimated using bottom-up and top-down approaches based on the GEF methodology. The overall GHG emission results are as follows:

	Cumulative		
	Total	***2016-2021***	***2022-2041***
Direct Total Energy Savings (GWh)	5,285	5,285	0
Direct GHG Emission Savings (tCO_2)	1,389,677	1,389,677	0
Indirect Bottom-up Emission Savings (tCO_2)	4,169,032		4,169,032
Indirect Top-down Emission Savings (tCO_2)	4,437,382		4,437,382

37. Based upon a total GCF grant of US$ 20 million, the cost per tonne of direct CO_2 reduction would be US$ 14.4. Additionally, significant indirect emissions savings can be expected – between 4.2 and 4.4 million tonnes of CO_2 reduction due to the project interventions (5.6 – 5.8 $MtCO_{2e}$, combining direct and indirect estimates) – yielding a total estimated cost per tonne of CO_2 reduced of between US $3.43 and US $3.60. Based on these calculations, the project is very cost-effective.

38. In addition to these impacts, it is estimated that 1,700 jobs will be created through the project.

39. The impact analysis is presented in detail in Annex D (Section D.3) of the UNDP Project Document, which is provided in Annex II of this GCF funding proposal.

C.3. Project / Programme Description

40. **Project Components, Outcomes and Outputs** (for detailed information at the activity-level, please refer to Annex II, UNDP Project Document).

41. The Project will use UNDP's de-risking methodology and framework for low-carbon energy investments. This methodology takes a systematic approach to identifying and quantifying investment risks, and then assembles packages of targeted public instruments to address these risks. Modelling is then performed to assess the impact of the instrument packages. The overall aim is to identify the most cost-effective package of public instruments to achieve a risk-return profile that catalyses private sector investment at scale. More information on the de-risking methodology can be found here: www.undp.org/DREI

42. The de-risking methodology identifies three types of public instrument. Each of the three types of public instruments addresses the risk-return profiles of energy efficient investments in a different way, either *reducing*, *transferring* or *compensating* for risk. Components 2 to 4 are structured around these categories.

- **Policy de-risking instruments** refer to public interventions that *reduce* risk, by removing the underlying barriers that create investment risk. Policy de-risking measures are typically in the form of new government policies, regulations and/or programmes. An example of policy de-risking could be the introduction of standards in energy efficiency materials for building retrofits.
- **Financial de-risking instruments** refer to public interventions that *transfer* the financial impact of investment risks from the private sector to the public sector. These are typically financial products offered by development banks. An example could be a loan guarantee from a development bank, in order for the commercial bank to lend to building owners to perform energy efficient measures.
- Recognising that not all risks can be reduced through policy de-risking or transferred through financial de-risking, efforts to reduce risks can be supplemented by **financial incentives** to *compensate* for residual risks and thereby to increase returns. An example could be a targeted financial subsidy for certain household categories undergoing energy efficient upgrades.

43. Investments in energy efficiency building retrofits face different risks and barriers for each building category. The main building categories targeted in this project will be public buildings (schools, hospitals, municipal / government offices) and, in the residential sector, individual houses and multi-owner apartment buildings. These categories have been selected for this project due, on the one hand, to the specific barriers they face in investing in EE retrofits, the removal of which will increase the paradigm shift potential of the project; and, on the other hand, because the target population will include vulnerable groups such as low-income households. Technically, the measures for residential buildings are thermal cladding of outer walls, window replacement, roof insulation, and the use of thermostatic valves with hydraulic balancing; for public buildings, measures will include thermal insulation of walls, window replacement, roof insulation, new doors, efficient lighting (compact fluorescent or LED lighting), and the replacement of electrical heating systems with a natural gas heating systems (where demand-side measures are addressed)[18]. These measures reduce the need for heating or improve the efficiency of heating and lighting, thus saving energy and reducing GHG emissions by at least 50% compared to baseline. For each targeted building stock, a package of relevant policy and financial de-risking instruments will be implemented to address the specific circumstances and barriers in the country and in the targeted building sub-sector. This specificity will create an easily scalable model for subsequent replication of energy efficiency retrofits and market growth. The activities of the project will be structured around four main components.

44. **Component 1 – Establishment of building sector MRV and knowledge management**. Component 1 aims to establish robust MRV for the building sector to enable monitoring of energy use in buildings, prioritisation of buildings for energy efficiency retrofits, and quantification and monetisation of the resulting energy savings. Robust MRV is necessary to build the investment case for energy efficiency retrofits. The project will support the development of an

[18] Detailed description of proposed energy efficient retrofit measures and their technical, economic and environmental analysis is provided in the Annex IIa pp. 64-95

MRV framework, including guidelines and methodologies and building on UNDP's extensive experience with establishing Energy Management Information Systems (EMIS)[19] for buildings.[20] The project will then disseminate information on the cost-saving potential of energy efficiency retrofits to commercial banks and potential borrowers via the project website and stakeholder workshops. This aim is strongly supported by stakeholders in the field of energy efficiency in Armenia, who concluded recently at a roundtable meeting on models for supporting energy efficiency approaches in Armenia that finding and using a common set of strategic and powerful metrics for measuring results will be critical, both to communicating broadly on the financial and development gains to be made from energy efficiency investments, and to mobilising additional resources and support. The GCF project will contribute to the creation of knowledge and collective learning processes through promoting better information dissemination to stakeholders, including the private sector, and sharing lessons learned. Activities will be implemented / supported by private sector consulting companies and individual experts. The potential role of women in implementation of Component 1 is significant. Women can be agents of change in creating awareness on the benefits of EE investments. According to the Armenia Country Gender Assessment (July 2015) of the Asian Development Bank, many women are interested in energy-efficient and renewable energy projects, and know examples of pilot projects that they thought successful[21]. Indicators of women participation in this area will be monitored during implementation. The desired outcome of Component 1 is *Outcome 1: Robust MRV of GHG emissions from the building sector established*. The outputs and activities that will contribute to achieving this outcome are described below.

45. **Output 1.1 MRV systems for the buildings sector in Armenia established.** Under Component 1, technical assistance will be provided to market stakeholders in order to undertake MRV and report on energy savings. This technical assistance will include the following Activities:

    1.1.1 Development of the MRV framework, including guidelines and monitoring methodologies for the various categories of buildings.
    1.1.2 Support to full implementation of building EMIS in selected buildings for demonstration and capacity building purposes.

    Results:

Indicator:	Development and coverage of MRV system and database
Baseline:	N/A
Mid-term target:	Developed & in use for renovated buildings: full coverage of buildings retrofitted in this project
Final target:	Developed & in use for renovated buildings: full coverages of buildings retrofitted in this project

46. **Output 1.2 Knowledge management and MRV information disseminated.** Dissemination of information, including that gained from EMIS for buildings, will help to establish the business case for energy efficiency building retrofits: i.e. monitor building energy use, spot the immediate and most cost-effective opportunities, and effectively monitor performance and improvement. Without a good EMIS it is impossible to advance with any market-based instruments, because savings need to be objectively monitored in order to be monetised. The knowledge management plan will be detailed at project inception, according to the most up-to-date local context and the experience of project managers and other contributors. A communication and dissemination strategy will be developed (based on scoping, consultation with local stakeholders, understanding the baseline of awareness and the types of information needs) and will include the following Activities:

    1.2.1 Identify appropriate formats for reaching the relevant stakeholders:

    - The general public (this will be through a nationwide media campaign on building energy efficiency retrofits in which selected retrofit case-studies will be featured).
    - Municipal staff in charge of the allocation of resources in areas of urban planning and development, energy services, as well as municipal procurement.
    - National Government officials.
    - Companies in the buildings, renovation and energy services sectors.

[19] An Energy Management Information System (EMIS) refers to a computer-based system for collecting, storing and analysing information on the energy performance of the monitored objects. Energy use data for individual objects (buildings) can be aggregated and monitored at sectoral, regional and national level, depending on the eventual set-up of the system.
[20] UNDP first piloted and scaled-up EMIS in public sector in Croatia where the project freed up US$18 million of public budget annually as a result of nation-wide introduction of EMIS.
[21] http://www.adb.org/sites/default/files/institutional-document/162152/arm-country-gender-assessment.pdf

- Financial institutions.

1.2.2 Establish a website that will provide information and a platform for communication between the different stakeholders, thus enhancing cooperation and learning through the exchange of knowledge and skills.

Information about the project, activities and outputs will be made available and linked to building energy efficiency retrofit efforts in other countries. It will be updated regularly to reflect content created, developments during project implementation and case-studies. The site will collect resources relating to EE building renovation and make it possible to keep up to date with developments. The site will be regularly updated on activities, best practices and latest thinking.

1.2.3 Information dissemination to maximize the impact potential of the project in Armenia and beyond. Appropriate formats for information presentation and sharing will be developed based on their likely effectiveness for raising awareness, facilitating information access and providing actionable guidance and support to the sector. The following formats will be considered:

- *Seminars*, including themed national workshops focusing on best practice in building energy efficiency retrofits, potentially on an annual basis.
- *Tours of buildings* in which energy efficiency retrofits have been conducted. Presentations will be given by relevant project promoters to provide a powerful example of how these investments were achieved, and open up discussion regarding replication in other buildings.
- *Municipal EE corners* to provide information to the general public about the newest EE systems, products and materials available in Armenia
- *Promotional material* – e.g. case studies, brochures and briefings.
- *Harvesting lessons learned* – including through after-action reviews across project activities.

In addition, to maximise the impact potential of project results internationally, in particular in countries from the region with similar policy and market environment and barriers, the project will communicate and make publicly available related knowledge and best practices (e.g. examples of legislation and frameworks for building codes, procedures for home owner associations, legislation regarding multi-owner buildings, business models for EE investments, etc.) via the following channels:

- The existing portal, 'Energy Efficient Buildings in Central Asia and Armenia' at www.beeca.net (in English and Russian), will present and share all relevant materials and case studies with EE practitioners in Armenia and other transition countries with similar climate and policy conditions. In particular, the potential for EE market transformation in building sectors in Central Asia is vast and barriers are similar – hence GCF-supported work will be of high relevance to those countries as well;
- Presentation of project work and results at the annual Sustainable Energy Forum organised jointly by UNECE, UNDP and other international partners on a regular basis, as well as at other relevant international fora and initiatives, such as those of SE4ALL.

1.2.4 Provision of information to consumers: Economically attractive measures for energy efficiency are often left un-implemented because stakeholders are simply unaware that such measures exist. If they are aware, they may have unreliable information. Hence, the availability of information on the availability and features of energy efficiency measures is an important precondition to enabling them to act on these opportunities. In Armenia, consumers currently do not receive information on ways to use electricity more efficiently[22]. Provision of such information is common practice in many countries and the project will work to develop such a mechanism with the national energy utility, Electric Networks of Armenia, and work with this counterpart to develop modalities for the provision of information on energy efficiency to customers.

Results:

Indicator:	Existence and implementation of a plan for sharing lessons learned
Baseline:	N/A
Mid-term target:	Created and implemented
Final target:	Number of beneficiaries: 250,000, including at least 50% women

[22] World Bank Group (2013). *Pilot Report: RISE Readiness for Investment in Sustainable Energy - A Tool for Policymakers*

47. **Component 2 – Policy de-risking**. The policy de-risking component will support national, sub-national and local authorities to adopt and implement an enabling policy framework for energy efficiency retrofits. De-risking instruments will directly and indirectly address investment risks for commercial lenders of energy efficiency retrofit finance. This Component will support on-going legal reform in the field of energy efficiency. It will also support the gradual introduction of binding legislation on energy auditing, energy passports / certificates and labelling for existing buildings. This work will leverage the results of the UNDP-implemented, GEF-financed 'Improving Energy Efficiency in Buildings' project[23] (see Annex VII for more on this project). Policy de-risking tools will include the modernisation and enforcement of energy efficiency standards and mandatory energy performance standards for retrofitted buildings, as well as monitoring and enforcement of associated construction norms and standards; development, introduction and enforcement of adequate secondary legislation for providing a clear and effective set of functional models and a standard set of rules for all multi-apartment building management bodies to undertake energy efficiency retrofits; implementation and improvement of existing legislation and formulation of secondary legislation that will assist management of energy efficiency building retrofits for different types of building; and assistance to residents and common-share building organisations on collective decision-making on the complex issues of energy efficiency retrofit investment. Significant capacity building will take place through this component. UNDP's approach to capacity building addresses capacity at the individual, organisational and systemic levels. At the individual level, capacity building takes place through imparting knowledge and skills. At the organisational level, UNDP focuses on supporting organisations to develop mandates, tools, guidelines and information management systems that allow organisations to adopt best practice and adapt to change. At the systemic level, UNDP supports the creation of enabling environments through policy, economic, regulatory and accountability frameworks within which organisations and individuals operate. For all three levels of capacity building, UNDP will identify and hire international and local specialists that will work along-side local legislators providing on-the-job training on best practices. Specialists, working together with the national and municipal legislators, will prepare studies and reviews that underpin the creation of knowledge and the building of skills. In some cases, training courses may be provided to communicate knowledge to wider audiences.

48. The policy component will also include elements of market de-risking (removing technical and capacity barriers) by providing technical assistance to selected market players, mostly from the private sector, such as building owners / managers / owner associations and local government, in order to help identify, develop and aggregate technically and financially feasible energy efficiency retrofit projects. Activities will be implemented / supported by private sector consulting companies and individual experts. The desired outcome of Component 2 is *Outcome 2: National, sub-national and local authorities adopt and implement an enabling policy framework for EE retrofits*. The Outputs that will contribute to achieving this Outcome are described below.

49. **Output 2.1 Public instruments for the promotion of investment in EE selected**

2.1.1 The project will make use of UNDP's framework to support policy-makers in selecting public instruments to promote energy efficiency investment in developing countries[24].

The framework is organised into four stages.

Stage 1: *Risk Environment* identifies the set of investment barriers and associated risks relevant to the technology, and analyses how the existence of investment risks can increase financing costs.
Step 1: Determine a multi-stakeholder barrier and risk table for the energy efficiency investment.
Step 2: Quantify the impact of risk categories on increased financing costs.

Stage 2: *Public Instruments* selects a mix of public de-risking instruments to address the investor risks and quantifies how they, in turn, can reduce financing costs. This stage also determines the cost of the selected public de-risking instruments.
Step 1: Select one or more public de-risking instruments to mitigate the identified risk categories.
Step 2: Quantify the impact and the public costs of the public de-risking instruments.

[23] https://www.thegef.org/gef/project_detail?projID=3935
[24] Waissbein, O., Glemarec, Y. *et al*. (2013), *Derisking Renewable Energy Investment. A Framework to Support Policy-makers in Selecting Public Instruments to Promote Renewable Energy Investment in Developing Countries*: www.undp.org/drei

Stage 3: *Cost* determines the degree to which the reduced financing costs impact the investment's life-cycle cost.

Stage 4: *Evaluation* assesses the selected public de-risking instrument mix using four performance metrics, as well as through the use of sensitivity analyses. The four metrics are: (i) investment leverage ratio, (ii) savings leverage ratio, (iii) end-user affordability and (iv) carbon abatement.

The instruments for the promotion of investment in EE to be considered include:

- Assist at the national and sub-national level in developing on-going funding sources for energy efficiency improvements.
- Assist in developing fiscal policies that will improve the financial attractiveness of energy efficiency (e.g. reduced VAT rate specifically for energy efficiency measures), particularly as they address the needs of very low income households currently receiving state benefits.
- Assist in tariff reform where necessary for specific heating sources (notably electricity and district heating) to reflect actual costs of production – potentially including environmental externalities[25].
- Assist at the national and sub-national level in developing incentive programmes to encourage energy efficiency measures and/or building stock renewal (e.g. concessional loans, grant programmes, etc. particularly for low-income households).
- Assist in developing utility-run programmes for energy efficiency – especially via large electrical utilities and district heating companies.

Results:

Indicator:	UNDP's framework to support policy-makers in selecting public instruments to promote energy efficiency investment in developing countries used, adapted as necessary
Baseline:	Framework not used for EE in Armenia
Mid-term target:	Number of public instruments selected: 3
Final target:	Number of public instruments selected: 3

50. **Output 2.2 Support provided to on-going legal reform in the field of energy efficiency.** Technical assistance on legislative reform, including binding legislation on building codes, adequate secondary legislation on multi-owner building management, and retained savings in public buildings. In the UNDP-implemented, GEF-financed 'Improving Energy Efficiency in Buildings' project (2010 – ongoing), a component aims at achieving the design and enforcement of new energy efficiency building codes and/or standards for ***new buildings***. This project has resulted in legal reform in housing legislation, including various upcoming legislative amendments to the law "On energy efficiency and renewable energy", the law "On urban development", and the law "On developing the smaller centre of Yerevan". In addition, standards for ***new buildings*** were successfully developed including National Standard AST 362-2013 "Energy efficiency. Building energy passport. Main provisions. Typical forms" (enacted 1 January 2014), and Standard N40-V enacted on 1 November 2014, a direct result of UNDP's project[26]. This project has reinforced UNDP's working relationship with key stakeholders in the national, regional and municipal building sectors, and provides a solid platform for the GCF project. UNDP's approach to supporting legislation has been proven to be effective. Noting that the number of existing buildings far exceeds the number of buildings being constructed (See Section C.5 for building market overview), the potential for energy use reduction in existing buildings is much larger than the potential in new buildings. It is, however, much more complicated to create an enabling environment for large-scale EE retrofits than it is to implement higher standards in building construction. Activities will include:

2.2.1 Support to national, sub-national and local authorities to adopt and implement an enabling policy framework for energy efficiency retrofits. In view of the recommendations developed in Activity 2.1.1, and if needed, support

[25] The energy regulator is responsible for tariff setting within the policy / regulatory framework set by the Government, and the Ministry of Energy and Nature Resources is leading on energy efficiency policies. Both will be closely involved in the project work under this Output.

[26] In addition to the legislative results of the UNDP-GEF project, other results include construction of an energy efficient 3-story social building of 950m^2 in the city of Goris (resulting in 60% energy savings over the baseline), renovation of an apartment building in Avan district of Yerevan with 58% savings, work with the Al Hamra Real Estate Armenia LLC in a new residential complex in Yerevan leading to energy savings over baseline of 35%, ongoing design of the first LEED-certified building in Aremnia (in the Malatia-Sebastia district of Yerevan) with 30% savings. A laboratory for testing thermal and physical characteristics of construction materials has also been created. Further information about the results of UNDP-GEF project is provided in the Annex IIb "Energy Efficiency Upgrade of Multi-apartment Panel Building in the Republic of Armenia", Annex VIII "Mid-term evaluation of UNDP-GEF Improving Energy Efficiency in Buildings in Armenia Project", as well as in Annexes XIIIa, XIIIb, XIIIc, XIIId.

will be provided for the adoption of additional by-laws applicable to building retrofits. Adoption and enforcement of the new Building Code in relation to building retrofits will be ensured.

2.2.2 Support to the gradual introduction, according to an explicit and transparent timetable, of binding legislation on energy auditing, energy passports / certificates and labelling for existing buildings.

2.2.3 Support to the introduction of legislation specific to EE retrofits in public buildings, including required amendments in the public procurement rules.

Results:

Indicator:	Binding legislation on building codes and adequate secondary legislation adopted.
Baseline:	Level 3. Policies proposed and consultation ongoing.[27]
Mid-term target:	Level 4. Strong policy adopted
Final target:	Developed & in use for renovated buildings: full coverages of buildings retrofitted in this project

51. **Output 2.3 Support provided for the creation of an enabling policy framework for EE retrofits in multi-owner residential buildings: Legal status of Home-Owner Associations (HOAs), payment enforcement, professional management and consensus levels.** The project will support the development, introduction and enforcement of adequate secondary legislation to provide a clear and effective set of functional models and a standard set of rules for multi-owner building management bodies to undertake energy efficiency retrofits. Activities will include:

2.3.1 Support to policy-makers in developing policy relating to HOA legal status, payment enforcement, professional management and consensus levels:

- Support the establishment of a proper regulatory system (including secondary legislation) to address multi-family buildings. This will include establishing mechanisms for enforcement via “carrots” and “sticks”[28].
- Consensus levels to be made consistent with international best practices.
- Ensure all multi-owner buildings have HOAs that collect appropriate minimum payments from owners and enforce sufficiently clear, timely and effective mechanisms to enforce payment discipline.
- Introduction of a mechanism to assist poor households in covering payment obligations for the improvement (and, in some cases, ongoing maintenance) of buildings.
- Work with municipalities and Housing Management Companies to carry out awareness campaigns to encourage – and, where necessary, require – the engagement of professional building management services.

Results:

Indicator:	Adequate secondary legislation providing a clear and effective set of functional models and a standard set of rules for multi-owner building management bodies to undertake EE retrofits developed, introduced and enforced
Baseline:	Secondary legislation lacking
Mid-term target:	Level 6. Sub-sector plans reflect key policy targets
Final target:	Level 7. Regulatory frame-work developed

52. **Output 2.4 Support provided to building owners / managers / owner associations / ESCOs on legal matters related to energy efficiency retrofit projects.** The absence of business models for repayment of energy efficiency investment is considered the major barrier to private sector investment in energy efficiency retrofits in the public and residential sectors. The project will roll-out aggregative models for energy efficiency retrofits through ESCOs and through innovative legal structures for owner associations in multi-owner buildings. Private sector entities or Public-Private Partnerships (PPPs – ESCOs in this context) will be supported in establishing robust repayment schemes for their services (through, for example, legal and financial advice on structuring Energy Performance Contracts (EPCs) with building owners / owner associations). The main Activities under this Output will be:

2.4.1 Provide support on legal matters related to energy efficiency retrofit projects for multi-owner buildings:

- Collective decision-making processes.

[27] The indicators for 2.2, 2.3 and 2.4 use GEF definitions (as defined in Annex II of the Climate Change Mitigation Focal Area Strategy in the GEF-6 Programming Directions) for the baseline and targets.

[28] A stick could include setting up a mandatory payment scheme for all apartment owners to be administrated by a municipality. A carrot could include Government support for HOAs (with conditions that they would have to prove 3 months or more of payment discipline to a combined bank account).

- Clarification of ownership and responsibility for all parts of the building, including commonly-owned areas.
- Business models and payment mechanisms.
- Available solutions for helping poorer households to pay for energy efficiency retrofits.
- How to deal with absentee owners and empty apartments.

For HOAs specifically, the following legal and mediation support will be provided:

- Support municipalities in setting up resource centres for information provision on starting/managing an HOA.
- Work with municipalities and HMCs to motivate existing and functioning HOAs to take decisions regarding investments and loans via awareness-raising, education activities and technical analysis of potential investments.
- For large investments, work with HMCs to support HOAs in identifying their investment requirements through consultations and the preparation of Energy Audits, and/or Rational Energy Utilisation Plans, and/or Energy Performance Assessments, and/or Energy Performance Certificates.
- Assist in preparing building-level projects based on standard requirements for Conceptual Design documentation of each eligible building-level measure.
- Answer information requests and provide technical advice to prospective HOAs.

2.4.2 Provide support for establishing ESCOs: Current energy efficiency legislation does not fully support the ESCO modality and there are no fully operating energy service companies in Armenia[29]. An example of an ESCO-type arrangement that is currently being set up in Yerevan with UNDP support is the special account (fund) that will receive funds from savings generated by investments in energy efficiency lighting improvements and will use these funds for further target financing of new energy efficiency projects. Lessons will be learned from the operation of this fund, and the possibility of setting up a similar fund for energy efficiency building retrofits will be examined. Ultimately, the project aims to introduce the ESCO model, where appropriate, to Armenia in partnership with existing building sector stakeholders, public and private companies providing EE services and/or building management services.

Results:

Indicator:	Business models for repayment of EE investments implemented
Baseline:	Level 1. No business models for repayment of EE investments in buildings in place
Mid-term target:	Level 3. Strong proposal defined with buy-in from stakeholders confirmed
Final target:	Level 5. Financial mechanism in operation with evidence of stability

53. **Output 2.5 Exit strategy measures implemented.** The GCF project will overcome systemic barriers to energy efficient retrofits of public and residential buildings in Armenia and this catalyse impacts beyond the end of GCF's funding. The approach taken of policy and financial derisking will provide a lasting impact and lies at the heart of the project's exit strategy as outlined in section D.2. Furthermore, the financial incentives for public buildings address first-mover barriers, but since investments in energy retrofits in public buildings are generally already financially viable further incentives are not likely to be needed. On the other hand, for residential buildings where financial viability is not the main driver of building renovation, and where household poverty is a significant barrier, ongoing funding, targeted at poor households, is likely to be needed beyond the end of the project. The strategy of working via the existing social support mechanisms aims to ensure that ownership of this support shifts to internal Armenian social security funding.

All these core elements supporting long-term sustainability have been built into the project design. Nevertheless, since the project is 6 years long and not all needs can be fully anticipated at this state, this output has been included to take into account any remaining needs for the creation of a sustainable market. Activities that will contribute to achieving this Output are:

[29] *Final Report: Energy Efficiency Orbits for Transition Economies*, Prepared for: Copenhagen Centre on Energy Efficiency (C2E2), 2015.

2.5.1 Development and implementation of exit strategy: Arrangements providing for long-term and financially sustainable continuation of project outcomes and results beyond completion of the project will be identified, discussed with stakeholders and implemented before the end of the project's lifetime. Components 1 and 2 of the project are designed to have a lasting impact by overcoming the existing barriers to investment in EE retrofits in buildings in Armenia. During project implementation, Components 3 and 4 offer additional financial de-risking and financial incentives. It is expected that private and public sector financing will be attracted to the sector as a result of the implementation of these de-risking instruments, resulting in the development of a market for EE building retrofits in Armenia. As a Government institution, the project's Executing Entity – the Ministry of Nature Protection of Armenia – will remain involved in the sector. An analysis of the remaining needs for financial de-risking and financial incentives beyond the scope of the project will be performed and recommendations made for how this need might be met. For residential buildings, where the incentive will be targeted at vulnerable households, the project will work through the existing Family Benefit Scheme of the Republic of Armenia. By following this approach, the project will demonstrate how the funding that the Government currently uses to compensate vulnerable households against past energy price increases can be redirected to energy savings. To close the loop, the policy de-risking activities will aim to establish sustainable Government funding wherever such incentives will continue to be needed as a long-term way to address the needs of households living in poverty.

Results:

Indicator:	Additional exit strategy measures designed and implemented
Baseline:	N/A
Mid-term target:	Additional exit strategy measures designed
Final target:	Additional exit strategy measures implemented

54. **Component 3 – Financial de-risking.** A financial de-risking component will work in partnership with EIB, the Renewable Resources and Energy Efficiency Fund of Armenia (the R2E2 Fund), local commercial (private sector) banks and other relevant national and international financial institutions to provide access to affordable capital for energy efficiency retrofits. These financial de-risking instruments will take several forms, including credit lines from financial institutions and/or loan guarantees to stimulate local private sector commercial banks to lend to private ESCOs and/or building owners. Where existing lending rates are prohibitive (current commercial lending rates are around 22% per year, with repayment periods of 5 years), such loans may be at concessional rates. In the context of the proposed GCF project, UNDP works closely with the European Investment Bank (EIB) on the provision of soft loans for public and residential energy efficiency retrofits. For these loans to be taken up successfully, GCF finance for the other Outputs and Components of the project are critical. In Component 3, technical assistance will also be supplied to local commercial banks to develop their products, appraise investments and develop a pipeline of EE retrofit investment projects. Finally, information will be disseminated to market stakeholders on the availability of energy efficiency building retrofit finance packages on a project website. Building retrofits will be performed by competitively-selected private sector engineering companies. Activities will be implemented / supported by private sector consulting companies and individual experts. The desired outcome of Component 3 is *Outcome 3: Access to affordable capital for energy efficiency retrofits provided*. The Outputs that will contribute to achieving this Outcome are described below.

55. **Output 3.1 Technical assistance provided to banks and other financial institutions for market facilitation for individual residences**

3.1.1 Provide support to banks to develop and market products for energy efficiency in individual residences. This will include training and knowledge transfer for banks on appraising investments (including risk assessment) and developing a pipeline of projects.

Results:

Indicator:	Capacity of banks to develop and market products for energy efficiency retrofits in individual houses
Baseline:	Banks do not have the capacity to develop and market products for energy efficiency retrofits in individual houses
Mid-term target:	2 Armenian banks have the capacity to develop and market products for energy efficiency retrofits in individual houses

Final target:	4 Armenian banks have the capacity to develop and market products for energy efficiency retrofits in individual houses

56. **Output 3.2 Technical assistance provided to banks for Home-Owner Association (HOA) market facilitation.** Since there is no real market for lending to HOAs in Armenia, technical support will be offered for establishing standard operating procedures for banks' introduction of credit offerings for multi-owner buildings, and an in-depth package of support will be provided for developing lending products for HOAs. The project will also work with Housing Management Companies (HMCs) and installers / suppliers who can act as facilitators for connecting HOAs with lending products. The focus will be on developing lending to existing HOAs and not on developing new HOAs. Activities that will contribute to achieving this Output are:

3.2.1 Support to development of bank products for HOAs:

- Demonstrating to senior management the market potential for investment – including demonstrating what similar banks are doing in EU countries.
- Providing technical assistance in developing the products.
- Site visits to places where such lending is taking place.
- Liaison with those organisations that can undertake direct outreach to HOAs (e.g. HMCs and suppliers/installers of technologies).
- Assistance in understanding the legislative and regulatory framework related to lending to HOAs.

Results:

Indicator:	Capacity of banks to develop and market products for energy efficiency retrofits in multi-owner residential buildings
Baseline:	Banks do not have the capacity to develop and market products for energy efficiency retrofits in multi-owner residential buildings
Mid-term target:	2 Armenian banks have the capacity to develop and market products for energy efficiency retrofits in multi-owner residential buildings
Final target:	4 Armenian banks have the capacity to develop and market products for energy efficiency retrofits in multi-owner residential buildings

57. **Output 3.3 Technical assistance provided to local government to develop EE retrofit projects for publicly-owned buildings.** Activities that will contribute to achieving this Output are:

3.3.1 Support to the process of identification, development and aggregation of technically- and financially-feasible EE retrofit projects in publicly-owned buildings. Since energy costs constitute a large share of annual expenses incurred by public buildings[30], those managing such buildings will be strongly motivated to invest in EE retrofits given information on the technical possibilities and financing options.

The model for the mechanism that will support such projects is the special purpose fund for improving energy efficiency of lighting systems in Yerevan city Municipality. This fund is being set up as one of the outputs of the UNDP-GEF 'Green Urban Lighting' project.

Across the project as a whole, extensive energy savings will be achieved. It is, however, worth noting that, in view of the extreme fuel poverty currently existing in some cases (some schools maintain indoor temperatures below 8 ºC in winter), the improvement of energy efficiency in such buildings will result in increased comfort levels of the occupants of such buildings but may not necessarily lead to a reduction in energy use, as energy use will be maintained at previous levels but will result in more acceptable indoor temperatures being maintained. This effect, which is the result of what is termed 'suppressed demand', has been dealt with in climate change mitigation projects. CDM guidelines, for example, recognise that in cases where, prior to the implementation of the project, the energy services being provided to end-users were too low to meet basic

[30] The C2E2 report referred to in footnote 9, p. 47, states that: "In a survey of educational, municipal, and healthcare buildings, 35% of those surveyed admitted that electricity bills amount to 11-20% of their total annual spending. Electricity costs were particularly high for educational buildings, where 38% of respondents reported their electricity bills at 11-20% of the total annual spending, whereas 27% of respondents reported the share of electricity costs above 20%. Many schools close down in winter, because they cannot provide adequate space heating. When they do operate, they often maintain indoor air temperatures way below adequate levels." Schools often operate at less than 8 ºC.

human needs, a baseline can be constructed in which future emissions are projected to rise above current levels[31].

Results:

Indicator:	Capacity of local government to develop EE retrofit projects for publicly-owned buildings
Baseline:	Local government does not have the capacity to develop EE retrofit projects for publicly-owned buildings
Mid-term target:	50% of local government employees believe local government has the capacity to develop EE retrofit projects for publicly-owned buildings
Final target:	80% of local government employees believe local government has the capacity to develop EE retrofit projects for publicly-owned buildings

58. **Output 3.4 Access to affordable capital for energy efficiency retrofits provided.** GCF funding for the other Outputs and Components will be critical in terms of the needed technical assistance and capacity building for the financial institutions to step in and the loans to be successfully taken up. UNDP will partner with national and international financial institutions, which may then, in turn, offer financial de-risking instruments such as credit lines, loan guarantees and public equity for investments in EE building retrofits to local financial institutions such as banks.

59. Activities will include:

3.4.1 Establishment and maintenance of the technical structure for the financial de-risking instruments offered. This will include:

- Validate the technical parameters of the de-risking instruments, including technologies, eligibility requirements and criteria for selection.
- Update the technical parameters regularly to ensure that they are clear, unambiguous and ambitious.
- Develop, update and maintain standard templates, forms and lists to allow for streamlined investment processes.
- Development of simple models and brochures for banks to present to customers outlining the typical costs and savings associated with energy efficiency investments.
- Draft an operations manual for bank personnel involved in implementation.

3.4.2 Verification of funded investments by independent audit companies to be contracted by the Project (PIU under Municipality of Yerevan). This will include:

- Carry out a verification of investment proposals. Confirm eligibility of technology / installers, reasonable, market-level costs and justifiable technology, delivery and installation.
- Carry out spot checks of selected investments before, during and after investment, as needed.

Results:

Indicator:	Amount and number of loans for building renovation provided
Baseline:	No lending provided
Mid-term target:	US$ 22 million
Final target:	US$ 86.25 million

60. **Output 3.5 Marketing platform created.** Develop marketing materials and a common brand / market platform on the advantages of energy efficiency retrofits, including publicising the results and the availability of energy efficiency building retrofit finance packages. Activities that will contribute to achieving this Output include:

3.5.1 Provide marketing support to banks (including SEF International, ACBA Bank, Ameria, Byblos Bank, Ararat Bank, and Ineco Bank[32]):

- Support the banks' marketing activities and enhance their broad implementation.

[31] UNFCCC CDM - Executive Board, 2012, EB 68 Report Annex 2, *Guidelines on the Consideration of Suppressed Demand in CDM Methodologies (Version 02.0)*.

[32] There are 6 local banks in Armenia that already offer financing for EE projects in collaboration with various IFIs (outside of the building sector), namely SEF International, ACBA Bank, Ameria, Byblos Bank, Ararat Bank and Ineco Bank. These banks will be the first ones to be targeted to receive technical assistance from the project for design of EE financing products for the residential building sector. Other interested banks, including from the list of EIB's financial intermediaries in Armenia, will also be invited through the open call for expression of interest.

- In coordination with banks, develop and produce marketing materials (flyers, ad banners, brochures, etc.).
- In cooperation with the banks' staff, produce a 'Handbook on Financing Residential Energy Efficiency Investments' for the bank to incorporate in its lending procedures.
- Assistance to banks in making their voice heard as stakeholders in the process of regulatory reform.

Results:

Indicator:	Marketing materials developed and platform created
Baseline:	No marketing materials exist
Mid-term target:	Marketing materials created and disseminated to at least 5,000 stakeholders
Final target:	Marketing platform created and disseminated to at least 25,000 stakeholders

61. **Component 4 – Financial incentives**. The desired outcome of Component 4 is *Outcome 4: Affordability of energy efficiency retrofits for the most vulnerable households ensured through targeted financial incentives to building / apartment owners / ESCOs*. The Outputs that will contribute to achieving this Outcome are described below. Targeted financial incentives will be provided and offered to building / apartment owners, or the ESCOs serving these clients, to ensure that the most vulnerable households can afford the costs of energy efficiency retrofits. The financial analysis (Annex II[33] and Annex III) shows that, for those earning less than the median household income of US$ 400 per month, building retrofits are not affordable. Despite the fact that, ultimately, the retrofits will reduce energy bills, such households will certainly not be able to afford the upfront costs of energy efficiency retrofits and, therefore, targeted subsidies to vulnerable groups are required to help address the affordability gap and stimulate the demand for these retrofits. Such incentives are common even in developed countries – both in the EU and in the USA, sizeable grants are common practice. In selecting appropriate financial incentives, UNDP has considered partial credit guarantees (first loss cover), partial performance guarantees, blended co-financing and grants. **Credit enhancement facilities** such as guarantees serve to de-risk lending for local banks. Under this arrangement, donor funds would be placed in a reserve account held by a trustee to cover a portion of the loan, with a portion of the sub-lending covered by funds in the reserve account. Such facilities could have an impact on the risk-assessment of local banks, but, at 50% cover, experience in the region has not shown any effect on interest rates. In addition, there is no effect on the risk-perception of sub-borrowers. **Blended co-financing** serves to reduce interest rates for sub-borrowers. If the donor funds are subordinated to the bank lending then this approach can combine a below market interest rate to sub-borrowers with credit enhancement measures. A clear disadvantage of blended co-financing is that the grant is ex-ante, and thus paid under all circumstances, and since the funds are blended with commercial finance it is also less transparent. In our consideration, the use of ex-post **capital grants**, with verification of work, is an effective way to ensure benefits accrue to sub-borrowers rather than being captured by the banks, and absorbed in interest rates (making it more transparent than the blended co-financing approach). A grant is also potentially performance-based, in contrast to blended co-financing approaches since the grant is only paid on successful completion and verification of the work undertaken. Considering the two sectors that will be addressed in this project, modifications to the grant approach will be taken for each:

- For public buildings, the ex-post capital grant paid to the relevant municipality or ESCO will be most appropriate. Systemic de-risking through the project – components 1 to 3 – will permanently remove the market barriers, resulting in ongoing post-project market growth without incentives

- For the residential sector, the incentives will be targeted at low-income households, so a different approach has been proposed. Due to widespread poverty and inequality prevalent across urban areas in Armenia, at least one-fifth of households cannot afford to keep adequately warm at reasonable cost, given their income[34]. Recognising this, the Government of Armenia has used its main social safety net programme, the Family Benefit Scheme, to provide compensation to vulnerable households against past energy price increases. The scheme uses a scoring system for household vulnerability and allocates state family benefits via Social Service Centres in each region/district. The project's approach will be to use these existing Armenian social support schemes to provide the incentives directly to vulnerable households. The incentives would be paid after verification of results for each loan, following approval, in-principal, at the time the loan is given. Local

[33] A feasibility study, including detailed technical, economic, financial and GHG analysis of the project, is included in Annex D of the UNDP Project Document on pp. 65-96, which is presented in Annex II of this GCF Funding Proposal. The integrated financial model which underpins this analysis is provided in Annex III of this GCF Funding Proposal.
[34] World Bank (2012), *Poverty and Distribution Impact of Gas Price Hike in Armenia*: https://openknowledge.worldbank.org/bitstream/handle/10986/11988/WPS6150.pdf?sequence=1

private sector commercial banks will participate in this activity, and local engineering companies will provide services. Activities will be supported by private sector consulting companies and individual experts.

- The selection criteria for allocation of incentives will be those already established by the Law on Social Protection. The municipality will be responsible for applying those criteria to identify eligible recipients of the GCF-funded incentives. Final approval of the list of eligible households will be made by the Project Board based on proposal received from the municipality.
- The overall process to be followed for provision of incentives for households and public buildings is given below.

Overall scheme for ex-post provision of incentives for households

	Step	Main responsible	Support
1	Specification of buildings and packages of eligible measures	PIU/Municipality	Ministry
2	Preparation of information packages for households, private sector, and banks	PIU/Municipality	Technical experts Ministry
4	PR campaign, marketing and advocacy	Project experts Banks ESCOs	
5	Decision in principle by households to retrofit building	Households / Housing Management Companies	PIU
6	Identification of eligible vulnerable households to receive incentive	Municipality (Social Department)	PIU
7	Approval of eligible households	Project Board	PIU
8	Preparation of investment application	Private companies Households / Housing Management Companies / ESCOs	Project experts (legal & technical support)
9	Application for loan	Households / Housing Management Companies / ESCOs	Private sector experts and companies
10	Approval and provision of loan – banks check measures match approved package	Banks	Project experts
11	Arrangement of works	Households / Housing Management Companies / ESCOs	Private sector experts and companies
12	Carrying out of works	Private companies	Private sector experts and companies
13	Verification of results – municipalities check that the money was spent on the promised measures	Independent evaluator (contracted by PIU/Municipality)	PIU
14	Payment of incentive directly to households / ESCOs (see Annex XIIIj)	PIU/Municipality	

Overall scheme for ex-post provision of incentives for public buildings

	Step	Main responsible	Support
1	Specification of packages of eligible measures	PIU/Municipality	Ministry
2	Preparation of priority investment plans	PIU/Municipality	Engineering companies Technical experts
3	Decision on buildings to be retrofitted and levels of incentives	Project board	PIU

5	Approval and provision of loan	Partner bank (EIB – to be confirmed)	
6	Arrangement of works	PIU/Municipality	Private sector experts and companies
7	Carrying out of works	Private companies	Private sector experts and companies
8	Verification of results	Independent evaluator	PIU
9	Payment of incentive (Annex XIIIj)	PIU/Municipality	

62. **Output 4.1 Targeted financial incentives provided to vulnerable groups to help address the affordability gap**

4.1.1 Targeted financial incentives provided to building / apartment owners, or the ESCOs serving these clients. The incentives will initially come from GCF, but during the course of the project, as a result of the policy work under Output 2.1, will increasingly be replaced by local incentives.

Results:

Indicator:	Financial mechanism to provide targeted financial incentives in place and incentives provided
Baseline:	No incentives in place
Mid-term target:	Incentives provided to 15,000 beneficiaries
Final target:	Incentives provided to 50,000 beneficiaries

C.4. Background Information on Project / Programme Sponsor

63. The executing entity for the Project is the Ministry of Nature Protection of the Republic of Armenia (MoNP). For background information on MoNP, see Section C.7 and Section E.5.2.

64. The individual investments funded by the project will be renovations of private residences and public buildings. Hence, a very large number of small individual investments, each with different sponsors, will be funded.

C.5. Market Overview (if applicable)

65. ***Overview of buildings market in Armenia:*** There has been growth in the residential building stock, particularly in the single-dwellings in rural areas. Between 2010-2013, the residential sector remained the highest in terms of final energy consumption, ahead of the public and commercial buildings sectors.

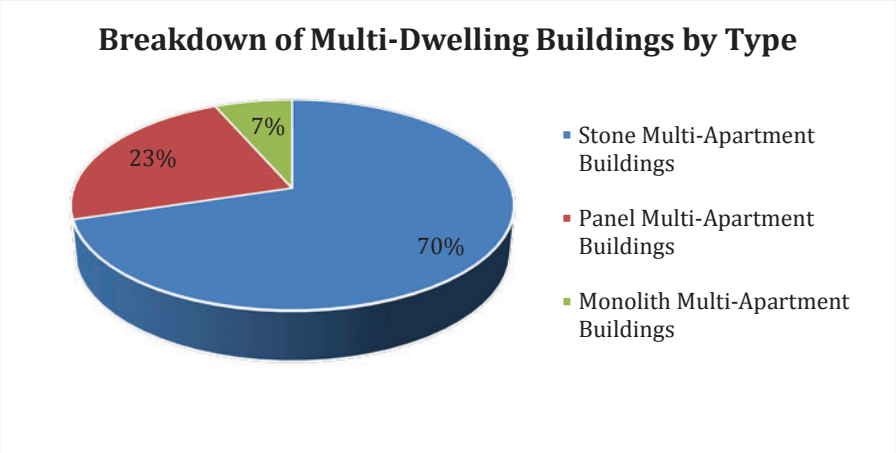
66. ***Number of buildings - Residential:*** The total number of residential buildings in Armenia is 445,567 (2013, ArmStat). 100% of residential apartments / houses are privately owned. The following tables provide a breakdown of multiple dwellings and single-dwelling households. As shown below, there is a skew towards multiple-dwelling buildings in urban settlements and a skew towards single-dwelling houses in rural settlements.

Multiple dwelling buildings by location	Units (2013)
Urban settlements	12,036
Rural settlements	6,938
Total buildings	18,974
Total number of apartments in multiple dwellings	435,427

Source: ArmStatBank 2015[35]

[35]Please see: http://armstatbank.am/Menu.aspx?rxid=002cc9e9-1bc8-4ae6-aaa3-40c0e377450a&px_language=en&px_db=ArmStatbank&px_type=PX

Multi-Dwelling Buildings by Type:



Source: ArmStatBank 2015

Single-dwelling houses by location	Units (2013)
Urban settlements	157,809
Rural settlements	268,784
Total buildings	426,593

Source: ArmStatBank 2015

67. ***Population by area:*** The population of Armenia is predominantly urban.

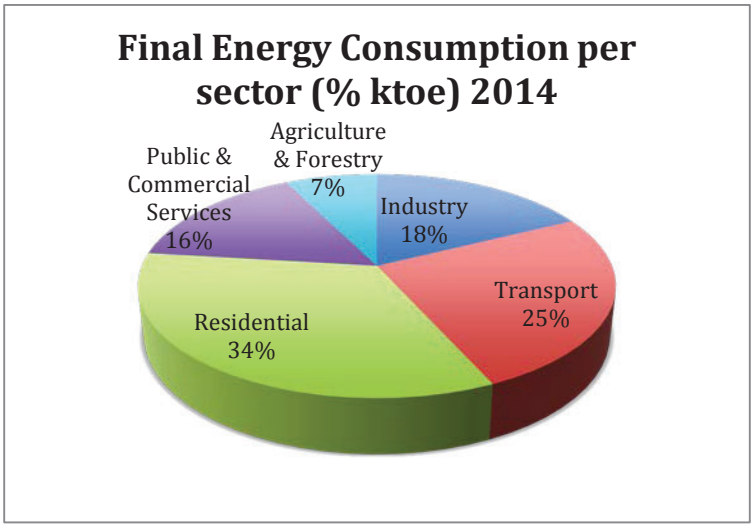
Location	Population	%
Urban settlements	1,873,591	62.7%
Rural settlements	1,115,876	37.2%
Total	**2,989,467**	

Source: United Nations, Department of Economic and Social Affairs, Population Division (2014)

68. ***Growth in building stock:*** Between 2001-2013, the total area of multiple-dwelling units increased by 5%; this type of building stock remains dominated by old stock, predominantly in urban areas. In the same period, Armenia experienced a 65% increase in the floor area of single-dwelling buildings (90,133 buildings), predominantly in rural areas. Approximately two-thirds of single-dwelling homes are older building stock. This context frames the rationale of the project: that there is a clear need to improve the energy efficiency of the existing building stock.

Housing stock by location and type	km² in 2001	km² in 2013
Total area of apartments of multiple dwellings	26,296	27,534
Total area of single dwelling houses	40,451	66,806
Total area of housing stock	**67,242**	**94,656**

69. ***Residential Energy Consumption:*** The residential sector in Armenia is the highest user of energy.



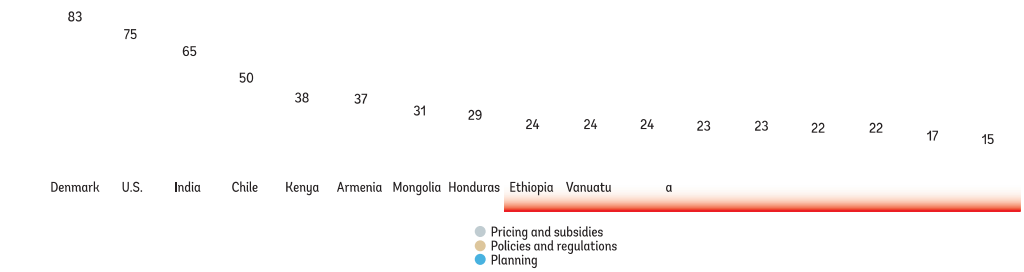
Source: ArmStatBank 2015

70. **Energy prices**: Average electricity tariffs for residential customers increased by a factor of 1.8 times between 2008-2014, and natural gas tariffs by a factor of 2.6 between 2007-2014. A decision on 17 June 2015 by the Public Services Regulatory Commission to raise electricity prices by a further 17-22% led to large protests in Yerevan and other cities. The extensive unrest demonstrates the significance of fuel poverty and has raised the issue to the top of the Government's agenda.

71. **Status of EE market and related infrastructure**: Armenia has a number (12) of quasi-ESCO companies[36], but their operatthe ions in building sector have, to date, been limited and focus mainly on public and commercial buildings, due to deficiencies in the regulations regarding performance-based contracting models in the residential building sub-sectors. There is also an Association of Armenian ESCOs (ArmESCO), established in 2005, which engages in strategic planning, capacity building, partnership creation and other activities to support and promote the ESCO market in Armenia. The Association has also promoted joint projects in which several ESCOs work together on larger projects.

72. The World Bank's 'Readiness for Investment in Sustainable Energy' (RISE) indicators present useful metrics capturing the strength of policies in promoting enabling environments and the readiness for attracting private sector participation and investment in energy efficiency. A RISE assessment conducted by the World Bank in 2014 puts Armenia in the "medium-performance" category of countries, with a score of 37 out of 100 (with the highest scores, 75-83, assigned to developed countries, e.g. Denmark and the USA). See the figure below and full details and discussion regarding Armenia's ranking in Annex A, Table 6, of Annex IIa of the Funding Proposal. Armenia's score indicates that initial market conditions and the fundamental policy and regulatory infrastructure are in place in Armenia, but that certain shortcomings exist and need to be addressed before full market potential can be realised.

Figure 5: RISE energy efficiency scores



[36] USAID 2007. *Armenia: Building Energy Efficiency Market Assessment*. Available at https://www.ase.org/sites/ase.org/files/armenia_ee_market_assessment_en.pdf

Source: World Bank, 2014. *Pilot Report: RISE – Readiness for Investment in Sustainable Energy: A Tool for Policymakers*. For information about RISE see: http://rise.worldbank.org/

C.6. Regulation, Taxation and Insurance

73. In Armenia, to build a new building or to perform a major reconstruction (such as enveloping) it is necessary to apply for and obtain an architectural-constructional assignment from the community / municipality. Any construction / intervention to the building that requires an architectural-constructional assignment also requires the design to be developed by a licensed architectural company followed by an independent assessment of the design by another licenced expert / company. Construction and technical oversight of construction must be conducted by licensed companies. The Ministry of Urban Development is the national authority for licensing in the construction sector. Construction permits are issued by local authorities.[37] The procedure described above will be followed for all buildings retrofitted under the GCF project. It is the responsibility of sub-contractors, i.e. companies undertaking building retrofits, to be in a procession of appropriate licences, as well as to secure building reconstruction permits in line with the above requirements. All licences and permits will have to be obtained prior to commencement of EE retrofits. Works on EE retrofits under the project will be phased, starting with Q3 Year 1 for public buildings and Year 2 for residential buildings (See Annex X). Only companies with appropriate licences will be allowed to bid for EE retrofit contracts with the Municipality and/or Building Owners. It will then be responsibility of selected contractors to secure appropriate permits for retrofit of specific buildings covered under the contracts. GCF-funded incentives will be released upon completion of EE retrofits and independent verification of the quality of works, including compliance with all relevant requirements.

74. For activities related to procurement of goods and services through UNDP, according to the Standard Basic Assistance Agreement (SBAA) signed with the Government, taxes are not applicable. Section 7 of the Convention on the Privileges and Immunities of the United Nations provides, inter alia, that the United Nations, including its subsidiary organs, is exempt from all direct taxes, except charges for utilities services, and is exempt from customs duties and charges of a similar nature in respect of articles imported or exported for its official use. If the services are procured directly by the Government implementing partners, then the national procedures apply, which entail the payment of Value Added Tax (VAT) amounting to 20% of the turnover of taxable goods and services, which is equal to 16.67% of VAT-inclusive prices.

C.7. Institutional / Implementation Arrangements

For more detailed description of the governance structure of the project/programme and operational arrangements, please refer to Section 5 (Implementation and Institutional Arrangements) of the UNDP Project Document in Annex II.

75. The project will be implemented following UNDP's National Implementation Modality (NIM)[38], according to the Standard Basic Assistance Agreement (SBAA - see Annex XIII) between UNDP and the Government of Armenia, the UNDP Country Programme Document (CPD – see Annex XIII) and the Armenia – United Nations Development Assistance Framework for 2016-2020 (UNDAF – see Annex XIII), and as per the policies and procedures outlined in the UNDP Programme and Operations Policies and Procedures (POPP)[39]. 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 organisations 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.

[37] For a detailed description of the procedure to obtain construction permits see: http://www.doingbusiness.org/data/exploreeconomies/armenia#dealing-with-construction-permits

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

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

76. In legal terms, project implementation will be governed by the national Government's signature of the UNDP SBAA[40] (See Annex XIII) together with a UNDP project document provided in Annex II, which will be signed by the UNDP Country Office in Armenia, the Implementing Partner (the Ministry of Nature Protection) and the Responsible Party (the Municipality of Yerevan) to govern the use of the funds (once the funds are secured)

77. The **Implementing Partner** (UNDP terminology) – Executing Partner (GCF terminology) – for this project is the Ministry of Nature Protection (MoNP) of the Republic of Armenia (RA), as the national authorised body for UNFCCC implementation in Armenia. MoNP is accountable to UNDP for managing the project, including the monitoring and evaluation of project interventions, achieving project outcomes and for the effective use of UNDP resources. The following parties will assist MoNP in successfully delivering project outcomes: MoNP's Environmental Project Implementation Unit (EPIU) and the Municipality of Yerevan (through its Project Implementation Unit (PIU) – to be established), as the Responsible Party acting on behalf of MoNP. EPIU will lead the implementation of Component 1, while the Municipality of Yerevan will be responsible for delivering envisaged outputs under Components 2, 3 and 4.

78. UNDP's overall role as an Accredited Entity is to provide oversight and quality assurance through its Headquarters and Country Office units. This role includes: (i) project preparation oversight; (ii) project implementation oversight and supervision, including financial management; and (iii) project completion and evaluation oversight. It also includes oversight roles in relation to reporting and knowledge-management. The 'project assurance' function of UNDP is to support the Project Board by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed. Project assurance has to be independent of the Project Manager; therefore, the Project Board cannot delegate any of its assurance responsibilities to the Project Manager. A UNDP Programme Officer, or M&E Officer, typically holds the Project Assurance role on behalf of UNDP. The 'senior supplier' role of UNDP is to represent the interests of the parties that which provide funding and/or technical expertise to the project (designing, developing, facilitating, procuring, implementing). The senior supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project.

79. MoNP will be responsible for the overall supervision of the project to ensure synergy with other GHG mitigation policies and measures in the country. UNDP has a long track-record of successful collaboration with MoNP, dating from 1997. MoNP has the capacity and knowledge to guide and oversee the conceptual aspect of project implementation, including professional guidance on achieving the climate change mitigation objectives and overseeing the GHG emissions reduction impacts. MoNP has been the implementing agency for the full-size UNDP-GEF 'Improving Energy Efficiency of Municipal Heat and Hot Water Supply' project[41], and the UNDP-GEF 'Improving Energy Efficiency in Buildings' project, and has a proven track-record in successful implementation and cooperation with different ministries and stakeholders. The day-to-day implementation of the project will be carried out through the well-established UNDP Climate Change Programme Unit coordinated by MoNP. GCF funds will not be used to pay the salaries of Government personnel, whose costs will be fully covered by the Government. The management arrangements for this project are summarised in Figure 3 below.

80. In addition, MoNP's **Environmental Project Implementation Unit (EPIU)** will be closely involved in project implementation (in particular, it will lead the Component 1 on MRV) and will also receive assistance and capacity building from the project to prepare for its subsequent accreditation under the GCF as a National Accredited Entity. EPIU is currently undergoing the accreditation process for the Adaptation Fund (please see EPIU's application request to Adaptation Fund (AF) attached under Annex XIII), and the support to GCF accreditation will build on this AF baseline.

81. The Municipality of the City of Yerevan will act as the Responsible Party for components 2-4 of the Project. The Municipality is approving and managing the city budget on annual base. The 2015 budget approved on December 23 by Council decision #265-N involves income of approximately US$ 149.73 million and expenditures of approximately US$ 150.25 million. Yerevan Municipality has a special procurement department responsible for all procurements, including services and works executed through open and competitive tenders in compliance with the Law on Procurement of the Republic of Armenia. Yerevan Municipality has long track-record of successful collaboration and implementation of international projects. Some of the most recent examples include

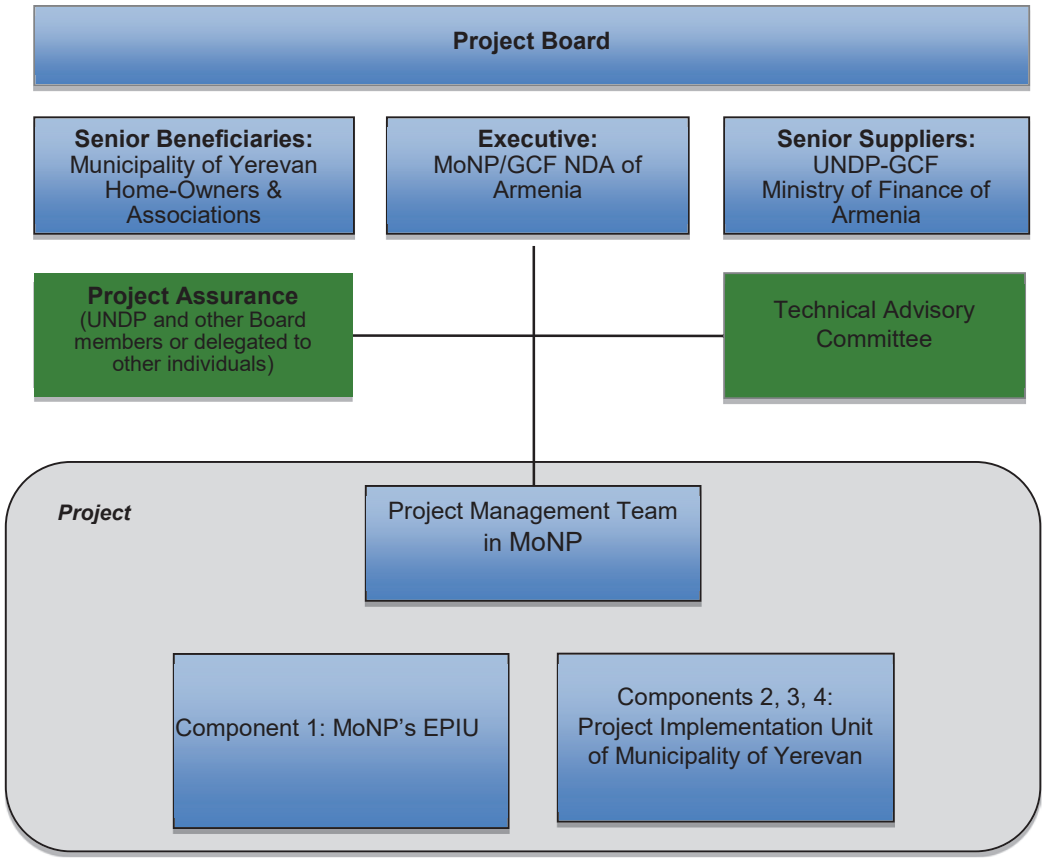
[40] SBAA was signed with the Government of Armenia on March 8th 1995.
[41] http://erc.undp.org/evaluationadmin/downloaddocument.html?docid=6769

the implementation of the 'Sustainable Transport Development Investment Programme' under a loan agreement between the Armenian Republic and the Asian Development Bank. The project, with a total value of US$ 48 million, is implemented by the Municipality through the 'Yerevan Construction Investment Project Implementation Unit (PIU)'. The Municipality is also an implementing agency of the EBRD US$ 4.0 million loan and EURO 1.9 million grant project aimed at energy efficient upgrades of the street lighting system in the city. Before the project starts, a Harmonised Approach to Cash Transfer (HACT) assessment will be undertaken by UNDP to ascertain the Municipality's financial management capacity. The **Project Implementation Unit (PIU)** will be established at the Municipality of Yerevan and will be composed of staff selected on a competitive basis with a track-record of working on housing and building quality issues. Project management responsibilities that the PIU will take on will include the day-to-day management and decision-making over Components 2-4 of the Project.

82. The Municipality's PIU will be responsible for delivering all envisaged outputs under Components 2, 3 and 4, whereas the MoNP's Environmental Project Implementation Unit (EPIU) will be responsible for delivering all outputs under Component 1 (See Annex XIIIk). Detailed execution responsibilities are provided in Annex XIIIk and in the Figure below.

83. UNDP will be the GCF Accredited Entity and its Country Office (UNDP CO) in Armenia will be responsible for the management of the grant, ensuring transparency, appropriate conduct and financial responsibility. The UNDP CO will gradually hand over project management functions to the Project Implementation Unit (PIU) to be established under Yerevan Municipality. UNDP will continue to act as the financial delivery mechanism for the GCF grant and will continue technical assistance and assurance of quality control for the full duration of the project.

Figure 3. Project Management Structure



84. Terms of reference (including selection, membership, and accountability) will be established for each function in the structure. Signed conflict of interest declarations will be required from members of the Project Board, Executive, Project Management Team and Project Implementation Unit.

85. The **Project Board** is comprised of the following organisations: the Ministry of Nature Protection of RA, Yerevan Municipality, the Ministry of Urban Development of RA, the Ministry of Energy and Natural Resources of RA, UNDP and potential parallel financing partners (EIB). The Project Board is responsible for making, by consensus, management decisions when guidance is required by the Project Manager. Project Board decisions will be made in accordance with standards that shall ensure management for development results, best value for money, fairness, integrity, transparency and effective international competition. In case a consensus cannot be reached within the Board, the final decision shall rest with the UNDP Programme Manager. The Project Board will meet twice a year, unless an ad hoc meeting is requested in writing by a Board member.

86. The **Technical Advisory Committee** will comprise representatives of interested public and private agencies. The Ministry of Energy and Natural Resources, the Ministry of Urban Development, the Ministry of Territorial Administration, the Ministry of Economy, the Ministry of Nature Protection, the R2E2 Fund, the National Institute for Standards of the Republic of Armenia, and the National University of Architecture and Construction will be invited to nominate representatives to the Technical Advisory Committee. This group will meet annually, with periodic consultation as needed throughout the year. The Board will actively seek and take into account the input from the Technical Advisory Committee. Once a year, Board meetings will be timed to occur immediately after the annual meetings of the Technical Advisory Committee.

87. The **Project Manager** will run the project on a day-to-day basis on behalf of MoNP within the constraints laid down by the Project Board. The Project Manager function will end when the final project terminal evaluation report, and other documentation required by the GCF and UNDP, has been completed and submitted to UNDP. The Project Manager is responsible for day-to-day management and decision-making for the project and for the establishment of internal control processes in the project. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost.

88. For UNDP to ensure that cash transfers are properly managed, Harmonised Approach to Cash Transfer (HACT) assessments will be undertaken on the following relevant institutions: PIU of the Municipality of Yerevan (when established and operational) and the EPIU of the MoNP. The project will also establish a purchasing review committee for the project as per UNDP Financial Regulation and Rule 121.01.

89. Specific responsibilities will include:

90. *Overall project management:*
    - Manage the realisation of project outputs through activities;
    - Liaise with the Project Board to assure the overall direction and integrity of the project;
    - Identify and obtain any support and advice required for the management, planning and control of the project;
    - Responsibility for project administration;
    - Liaise with any suppliers;

91. *Running the project:*
    - Plan the activities of the project and monitor progress against the quality criteria.
    - Mobilise goods and services to initiative activities, including drafting TORs and work specifications;
    - Monitor financial resources and accounting to ensure accuracy and reliability of financial reports;
    - Manage and monitor the project risks
    - Be responsible for managing issues and requests for change by maintaining an Issues Log.

92. Engineering companies and other service providers hired by UNDP, EPIU or the PIU will be procured using GCF-approved UNDP procurement practices with competitive and open tendering. The energy efficiency retrofits themselves will be performed by private-sector engineering companies. For public buildings, procurement will take place according to the national public procurement rules. For residential beneficiaries, procurement requirement may be specified by the banks that are providing loans. The approach will be competitive / private sector-oriented, with the aim of creating a competitive sustainable market for energy efficiency retrofits in the country.

93. The approach to funding the four project components are as follows:

- Component 1: Competitive and open tendering for individual and company services (see Annex Vb – Procurement Plan)
- Component 2: Competitive and open tendering for individual and company services (see Annex Vb – Procurement Plan)
- Component 3: Competitive and open tendering for individual and company services (see Annex Vb – Procurement Plan)
- Component 4: For investments that meet eligibility requirements, incentives funds will be provided by UNDP via PIU/Municipality of Yerevan, as follows:

- For public buildings the ex-post capital grant will be paid directly by UNDP to Municipality.
- For the residential sector, the incentives will be targeted at low-income households, so a different approach has been proposed. Due to widespread poverty and inequality prevalent across urban areas in Armenia, at least one-fifth of households cannot afford to keep adequately warm at reasonable cost, given their income[42]. Recognising this, the Government of Armenia has used its main social safety net programme, the Family Benefit Scheme, to provide compensation to vulnerable households against past energy price increases. The scheme uses a scoring system for household vulnerability and allocates state family benefits via Social Service Centres in each region/district. The project's approach will aim to use these existing Armenian social support schemes to provide the incentives directly to vulnerable households. The incentives would be paid by PIU/Municipality of Yerevan after verification of results for each loan, following approval, in-principal, at the time the loan is given (See Annex XIIIj).

94. Implementation of Component 4 will be conditional on the successful delivery of Output 2.3, 'Support provided for the creation of an enabling policy framework for EE retrofits in multi-owner residential buildings', which is a prerequisite for successful implementation of the incentive scheme.

[42] World Bank (2012), *Poverty and Distribution Impact of Gas Price Hike in Armenia*: https://openknowledge.worldbank.org/bitstream/handle/10986/11988/WPS6150.pdf?sequence=1

C.8. Timetable of Project/Programme Implementation

The timetable is provided Annex X.

D.1. Value Added for GCF Involvement

95. In the absence of the GCF contribution, the market barriers outlined in Section C.2 will limit investments in energy savings and restrict the participation of private sector capital. GCF involvement will help to overcome the barriers and create a self-sustaining market for private and public investment in low-carbon building renovation.

96. While achieving thermal modernisation through energy efficiency retrofits in all building sectors is a national development and climate change mitigation priority, the overall investment risk profile of such retrofits is prohibitive, deterring private and public investment despite the vast potential for highly cost-effective energy-saving and GHG emission reduction opportunities. While there are scattered donor efforts to improve the energy efficiency of the Armenian economy, in the absence of GCF support a comprehensive removal of the barriers limiting investment in EE building retrofits will not occur. As a result, existing buildings in Armenia will continue to consume high amounts of energy, incurring high costs for residents and organisations operating public buildings. Significant potential energy savings (and corresponding GHG emission reductions) will go unrealised.

97. The following barriers in particular will be removed as a result of GCF involvement:

- Policy barriers - Component 2 will employ the GCF grant to build on the work begun in an earlier GEF project and lead to Armenian authorities adopting and implementing an enabling policy framework for EE retrofits.
- Financial barriers - Components 3 and 4 will employ the GCF grant along with co-financing to initiate the development of a market in which loans are available at rates and tenors that encourage investment in EE solutions and additional financial incentives are provided to poor and vulnerable households. The GCF contribution is particularly critical for Component 4 because, in the absence of financial incentives, EE retrofits have negative NPV and do not present a viable investment opportunity (see results of financial analysis in Annex II, pp. 65-96, and Annex III). Also, incentives for low-income households are needed to unlock building-level investments, otherwise these households would block building-level investment decisions in multi-apartment buildings.
- Market barriers - Component 2 will employ the GCF grant to build capacity, particularly in multi-owner residential buildings, to enable residents to invest in EE retrofits in these buildings.
- Technical / capacity barriers - Components 1 and 2 will employ the GCF grant to build the required knowledge base for implementing EE retrofits in the country.

98. The GCF involvement will lead to energy efficiency retrofits with a significantly higher energy-saving performance than is common practice in Armenia. This additionality will provide a lasting transformation of the market and result in long-term climate change benefits.

D.2. Exit Strategy

99. Long-term sustainability of the project is embedded in the project design, which aims at overcoming systemic barriers and creating market conditions for energy efficiency investment thus catalysing impacts beyond the end of the GCF funding. Sustainable market opportunities for EE investment will be created by:

    - Addressing policy needs within Component 2: the legislative barriers to public and private sector investment will be addressed at national, sub-national and local authority levels, and technical and capacity barriers will be addressed.
    - Addressing financing needs within Component 3: The project will put in place arrangements for long-term sustainable provision of affordable finance for EE building renovation, which matches the risk-return profile of such investment. It will do this by building the knowledge and experience of local banks and ESCOs.
    - Catalysing initial investment through financial incentives provided under Component 4, which will serve to kick-start the market, addressing first-mover barriers at both local bank and borrower levels. By seeding a critical mass of investment, practical experience and know-how will be created, thus addressing these systemic barriers. For residential buildings, where the incentive will be targeted at vulnerable households, the project will work through the existing Family Benefit Scheme of the Republic of Armenia. By following this approach, the project will demonstrate how the funding that the Government currently uses to compensate vulnerable households against past energy price increases can be redirected to energy savings. To close the loop, the policy de-risking activities will aim to

establish sustainable Government funding wherever such incentives will continue to be needed as a long-term way to address the needs of households living in poverty.

100. Output 2.5 will take into account any remaining needs for the creation of a sustainable market and will put in place any necessary additional measures needed to ensure the market created will continue developing after the GCF intervention. These measures will be discussed with stakeholders and implemented before the end of the project's lifetime. Components 1 and 2 of the project are designed to have a lasting impact by overcoming the existing barriers to investment in EE retrofits in buildings in Armenia. During project implementation, Components 3 and 4 offer additional financial de-risking and financial incentives. It is expected that private and public sector financing will be attracted to the sector as a result of the implementation of these de-risking instruments, resulting in the development of a market for EE building retrofits in Armenia. As a Government institution, the project's Executing Entity – the Ministry of Nature Protection of Armenia – will remain involved in the sector.

E.1. Impact Potential

Potential of the project/programme to contribute to the achievement of the Fund's objectives and result areas

E.1.1. Mitigation / adaptation impact potential

101. The Project will achieve high greenhouse gas (GHG) emission reductions from improved EE and lower energy-intensity buildings. Based on experience and evidence from energy audits of UNDP's pilot project in Yerevan[43] (Annex IIa describes this pilot project on EE upgrading of a multi-apartment residential building and its results), up to 60% of energy consumption / GHG emissions in buildings can be reduced cost-effectively.

- Total tonnes of direct CO_2 eq reduced per annum: an estimated 69,484 tCO_2 per year or 1.4 million tCO_2 over the 20-year lifetime of the EE interventions.
- Including direct and estimated indirect emission savings, a total of 5.6 to 5.8 million tCO_2 over the 20-year lifetime of the EE interventions will be achieved.
- Expected total number of direct beneficiaries: 210,000.

102. The overall impacts of the GCF project have been estimated using the data from the technical and financial analysis (presented in Annex II). The overall impacts are summarised in the tables below:

	Average cost per retrofit (US$)	Average level of grant (%)	Energy savings (GWh/year)	GHG savings (tCO_{2eq} / year)	Number of buildings	Total amount of grant (US$)	Total investment (US$)	Lifetime GHG savings (CO_{2eq}, 20 years)
Single-family individual buildings	10,000	9%	110.3	27,239	6,000	5,400,000	60,000,000	544,783
Multi-family apartment buildings	120,000	22%	93.1	22,997	290	7,656,000	34,800,000	459,942
Public buildings (large, such as hospitals)	250,000	5%	7.7	5,005	23	287,500	5,750,000	100,093
Public buildings (small, such as schools)	95,000	8%	53.2	14,243	150	1,140,000	14,250,000	284,860
Total			**264.3**	**69,484**	**6,463**	**14,483,500**	**114,800,000**	**1,389,677**

E.1.2. Key impact potential indicator

[43] In 2013-2014, UNDP, with GEF financial support, implemented the first large-scale thermal modernisation project in the Republic of Armenia in a typical panel multi-apartment residential building in Yerevan. Full results of the project, including technical, economic and environmental feasibility, are presented in Annex IIa to this proposal. Also, the results of a social survey of the residents are presented in Annex XIIIa (pp. 43-45).

Provide specific numerical values for the indicators below.			
GCF core indicators	*Expected tonnes of carbon dioxide equivalent (t CO_2 eq) to be reduced or avoided (Mitigation only)*	*Annual*	69,484 (direct)
		Lifetime	1,389,677 (direct) 4.2-4.4 million (indirect)
	Expected total number of direct and indirect beneficiaries (reduced vulnerability or increased resilience); number of beneficiaries relative to total population (adaptation only)	*Total*	210,000
		Percentage (%)	N/A
Other relevant indicators	Regulatory systems: Level 5.1 – Institutional and regulatory systems that improve incentives for low-emission planning and development and their effective implementation. Number of vulnerable people (lowest quintile of household income) with improved building EE: 50,000		

Describe the detailed methodology used for calculating the indicators above.

Expected tonnes of carbon dioxide equivalent (tCO_2 eq) to be reduced or avoided (mitigation only)

103. A detailed bottom-up analysis of model buildings in Armenia has been conducted. Four models have been developed, two in the residential sector (one for an individual single-family house and one for a multi-family apartment building) and two in the public sector (a hospital and a school). Building parameters and energy characteristics were determined for each type of building. A set of efficiency measures was then applied and the energy needs and potential savings for these measures calculated. Total energy savings were estimated taking into account a rebound factor. Using the model buildings as a guide to potential energy and GHG reductions, the estimated total emission reductions from the project investments were calculated. The GHG emissions analysis makes use of the Global Environment Facility (GEF) methodology for energy efficiency projects[44]. GHG emission coefficients were taken from the GEF GHG calculation worksheets for natural gas and electricity (data for Armenia).[45] For electricity, the grid emission factor for Armenia, given in the GEF worksheets, is taken from the IGES database[46] and is based on the CDM combined margin approach. Total direct emission reductions are the sum of the reductions achieved in the four building categories evaluated.

104. The project will undertake a number of activities beyond simple investments that will also stimulate the market for energy efficiency in the residential and public building sectors. Therefore, there will be indirect energy savings triggered by investments not within the direct control of the project. These are estimated using bottom-up and top-down approaches based on the GEF methodology. For bottom-up emission estimates, the estimated direct reductions are multiplied by a replication factor – with the expectation that the volume of investments and GHG emissions reductions will increase by a factor of 3 over a 10-year period after project completion due to the project intervention. This is a modest replication factor according to GEF practice. To estimate the indirect GHG emission reductions using a top-down methodology, total 10-year market size was estimated.

105. A detailed description of the methodology used to calculate the expected tCO_2 eq reduced is provided in Annex H of the UNDP Project Document (Annex II).

Expected total number of direct and indirect beneficiaries (reduced vulnerability or increased resilience)

[44] See https://www.thegef.org/gef/pubs/STAP/Methodology-for-Calculating-GHG-Benefits-of-GEF-Energy-Efficiency-Projects-v.1 under "Financial Instruments"
[45] see https://www.thegef.org/gef/pubs/STAP/Methodology-for-Calculating-GHG-Benefits-of-GEF-Energy-Efficiency-Projects-v.1 under "Financial Instruments"
[46] To be found at http://pub.iges.or.jp/modules/envirolib/view.php?docid=2136

106. Direct beneficiaries of the project (who continue to benefit after the project for the lifetime of the investments) are calculated using an average household size of 5, and an average number of dwellings per apartment building of 36[47]. For public buildings, beneficiaries are taken as the average number of permanent building residents. For a hospital, this is the hospital staff, not the number of short-term users (patients).

107. Jobs created by the project are based on data in Ürge-Vorsatz *et al*. (2010): *Employment Impacts of a Large-Scale Deep Building Energy Retrofit Programme in Hungary*[48]. This detailed study takes into account jobs created in the construction sector, from the supply chain and from additional spending of additional disposable income as a result of financial savings. It also accounts for job losses in the energy supply sector resulting from reduced energy demand. The study finds that, on average, 17 jobs are created per million Euros invested (approximately 15 jobs per million US$). This employment factor is used here to estimate the number of jobs created as a result of the investments facilitated by the project. In order for the job creation to be sustained, there is an implicit assumption that lending will continue at the same rate in the future. If the retrofit investment market were to shrink after the project comes to an end, many of the jobs created would be lost.

108. The detailed numbers are shown in Annex D of the UNDP Project Document

Describe how the indicator values compare to the appropriate benchmarks established in a comparable context.

109. One sub-set of buildings with significant energy-saving potential in Armenia is concrete panel buildings, of which there are approximately 4,300. In such buildings alone, the energy-saving potential from thermal modernisation is over 1.250 TWh/year with a GHG reduction potential of 250,000 tonnes per year CO2eq, and annual savings of about US$ 63 million (based on gas and electricity tariffs of 2014).

E.2. Paradigm Shift Potential

Degree to which the proposed activity can catalyze impact beyond a one-off project/programme investment

E.2.1. Potential for scaling up and replication (Provide a numerical multiple and supporting rationale)

Describe expected contributions to global low-carbon and/or climate-resilient development pathways through a theory of change for scaling up and replication (e.g. in terms of multiples of initial impact of the proposed project/programme).

110. The paradigm shift potential for the proposed project lies in the project's focus on the private sector as the driving force for investment and implementation of EE retrofits, as opposed to current models which are primarily based on (scarce) public finance and lack repayment mechanisms (i.e. accumulated energy savings are not monetised and stay with building owners). The project will lead to a paradigm shift in the perception of investment in EE retrofits by investors, which are currently viewed as too risky and unattractive for private sector.

111. The theory of change for the project is illustrated in Annex XII. The project's results chain is based on UNDP's approach to market transformation for energy efficiency. This approach is based on the fact that, due to the high upfront capital intensity of energy efficient investments, access to large quantities of low-cost financing is critical to cost-effectively transform energy efficient markets. The main elements of the theory of change are support to governments to put together public instrument packages that: (i) address the non-financial barriers that block demand for investment; and (ii) create attractive risk-return profiles by *reducing, transferring* or *compensating* for risk.

Activity-specific sub-criteria and assessment factors:

112. *Innovation: Opportunities for targeting new market segments.* Project Outputs 2.3, 2.4 and 3.2 will create the enabling policy framework for EE retrofits in multi-owner residential buildings, provide technical assistance to banks to enable them to finance EE retrofits in such buildings, and support HOAs in accessing such finance.

[47] These assumptions are based on the characteristics of the pilot building in Yerevan, which is a typical multi-apartment residential building in Armenia (i.e, there are 4,300 similar buildings across the country).
[48] http://zbr.kormany.hu/download/8/82/00000/Study%20Deep%20Building%20Energy%20Retrofit%20Prog.pdf

This will create a market for EE retrofits in the market segment of multi-owner buildings in Armenia, a market which is non-existent at the moment

113. *Innovation: Opportunities for adopting new business models.* The project will encourage the development of an enabling environment for ESCOs in Armenia and, in Output 2.4, includes activities that will provide support to establishing ESCO models based on Energy Performance Contracting (EPCs) for implementation of EE retrofits in multi-apartment residential buildings. Such models are currently only at an early stage of development in the country.

114. *Level of contributions to global low-carbon development pathways:* The project's contribution to the shift to low-emission sustainable development pathways is described in Section E.1. The buildings sector worldwide is a major energy consumer. As described in Section C.2, GHG emissions from the building sector now represent 19% of global GHG emissions. Reduction of emissions from existing building stock will be an essential element of a global low-carbon development pathway, but there are numerous barriers to achieving such reductions. This project will provide a replicable, scalable model for the creation of an enabling environment for EE retrofits that will be particularly relevant for the transition economies of the former Soviet Union, in which there is huge potential for improvement of energy efficiency in the built environment[49].

115. *Potential for expanding the scale and impact of the proposed project (scalability). A theory of change for scaling-up the scope and impact of the intended project without commensurately increasing the total costs of implementation.* The project has the potential to be highly scalable: Armenia has approximately 4,300 panel buildings. Once a working model for financing retrofits of this type of buildings has been established and the skills for performing such retrofits have been built with direct support from the GCF project targeting an initial sub-set of 290 panel buildings, it will be relatively straightforward to scale-up the project to the rest of this market segment. The potential for energy savings from EE retrofits of this building stock is about 1,250 million kWh/year or 250,000 tCO_2/year. The leveraged investment ratio is expected to be US$ 20 for every US$ 1 invested by the GCF (See Section E.6.2. for estimated scope and impacts induced by the project for each building category and the total leveraging ratio).

116. The project will undertake a number of activities beyond simple investments, which will stimulate the market for energy efficiency in the residential and public building sectors. Therefore, there will be indirect energy savings triggered by investments not within the direct control of the project. These are estimated using bottom-up and top-down approaches based on the GEF methodology. Indirect emission savings are estimated to be between 4.2-4.4 million tCO_2.

117. *Replicability. A theory of change for replication of the proposed activities in the project.* Replicability of the project is also high. Neighbouring countries have large numbers of similar buildings to those in Armenia as well as similar barriers and risks to EE investments and may benefit by learning from successful projects in Armenia.[50]

118. In summary, the potential to scale-up the project is incorporated into the project design: first, through the establishment of robust MRV for the building sector that will enable further investment decisions to be made on the basis of sound data; second, through supporting the creation of an enabling policy framework; and, third, through the establishment of a financial mechanism and a system for the provision of financial incentives to vulnerable households that can be expanded as needed. Beyond the direct project scale-up measures, the potential for replication is large – not just in Armenia, but also in the development of best-practice financing mechanisms that could be copied in neighbouring countries.

[49] Centre for Energy Efficiency (2015), *Final Report: Energy Efficiency Orbits for Transition Economies* http://www.cenef.ru/file/Final%20Report_C2E2_CENEf_June2_2015.pdf

[50] See Centre for Energy Efficiency (2015), *Final Report: Energy Efficiency Orbits for Transition Economies* http://www.cenef.ru/file/Final%20Report_C2E2_CENEf_June2_2015.pdf for an overview of potential and barriers to EE in building sector in former Soviet economies.

E.2.2. Contribution to the creation of an enabling environment

119. The key to achieving a true paradigm shift is through the creation of an enabling market-based environment through policy, finance, technical / capacity de-risking and barrier removal.

120. *Arrangements that provide for long-term and financially sustainable continuation of relevant outcomes and key relevant activities:* The project will strengthen the institutional and regulatory systems relevant to EE retrofits in Armenia. It will do this through working with national, sub-national and local authorities towards the adoption and implementation of an enabling policy framework for EE retrofits. This will be supported by the development of an MRV framework that will provide data for planning of further investments. The capacity that will be built in Government and in financial institutions for encouraging and financing EE retrofits will enable the development of a market that will continue to exist beyond completion of the intervention.

121. *Extent to which the project creates new markets:* The market for EE building retrofits in Armenia is currently extremely limited. For multi-owner buildings and public buildings in particular, no financial products exist that can fund such investments. HOAs lack the knowledge to engage in such projects and ESCO models have not yet been applied in these sectors. The project will create a functioning market for the different sub-segments of the buildings sector and create the market, which, once established, will develop further as a result of the improved risk environment for such investments that the project will create.

122. *Degree to which the activity will change incentives for market participants by reducing costs and risks, eliminating barriers to the deployment of a low-carbon solution:* project activities are designed to address the market barriers to energy efficient building renovation via a combination of policy and financial de-risking instruments and targeted financial incentives for key market players. By targeting the barriers, the project will reduce the overall investment risk profile of EE building retrofits and thus achieve a risk-return profile for EE building retrofits that will incentivise market participants to invest in such projects.

123. *Degree to which the proposed activities help to overcome systematic barriers to low-carbon development to catalyse impact beyond the scope of the project:* The project will systematically target the barriers and investment risks that currently result in a prohibitive overall investment risk profile of EE building retrofits in Armenia. The barriers (described in Section C.2) fall under the general categories of policy, financial, market and technical / capacity barriers. The project is designed to ensure that each of these barrier categories will be eliminated or reduced as far as possible in Activities specifically designed for that purpose, resulting in the creation of a favourable market environment for investment in EE retrofits in buildings that will be sustained beyond the scope of the project.

E.2.3. Contribution to regulatory framework and policies

124. The project will provide technical assistance to strengthen existing policies and formulate secondary legislation that support EE building retrofits in different building sectors.

125. Under Component 1, which will introduce robust MRV, improved data for decision-makers will allow policy-makers to set priorities for energy efficiency programmes within the buildings sector. The existence of the MRV system will allow decision-makers to formulate policies and programmes based on actual consumption and performance data from the building sector.

126. Component 2 will support national and local authorities to adopt and implement an enabling policy framework for EE retrofits. This Component will support on-going legal reform in the field of energy efficiency, such as introduction of binding legislation on energy auditing, energy passports/certificates and labelling for existing buildings. Measures will include: the modernisation and enforcement of EE standards and mandatory energy performance standards for retrofitted buildings; the development, introduction and enforcement of adequate secondary legislation for providing a clear and effective set of functional models and rules for multi-apartment building management bodies to undertake EE retrofits; legislation that will assist the management of energy efficiency building retrofits for different types of building; and assistance to residents and common-share building organisations on collective decision-making in the context of EE retrofit investment.

E.2.4. Potential for knowledge and learning

127. The project will contribute to knowledge creation and sharing by all market players. To ensure that the strengthening of knowledge will be a focus throughout the project's life, the project includes an output, Output 1.2, which deals specifically with the existence and implementation of a plan for sharing lessons learned. In addition, the provision of technical assistance to the construction sector, Government (national and sub-national) and HOAs will result in collective learning in those target groups. Energy and financial savings information will be collected, analysed and disseminated via the project website and through various other channels and activities such as workshops and advertising.

128. The project will support the implementation of building Energy Management Information Systems (EMIS) in retrofitted buildings. The information gained from these systems will be disseminated, helping to establish the business case for energy efficiency building retrofits, inform better policy-making and providing information for national documents on climate change such as future National Communications to the UNFCCC.

129. The monitoring and evaluation plan is described in Section H.2. The planned knowledge management activities, including the sharing of lessons learned, are described in Output 1.2

E.3. Sustainable Development Potential

Wider benefits and priorities

E.3.1. Environmental, social and economic co-benefits, including gender-sensitive development impact

130. Delivering a large-scale retrofit initiative in the form of the proposed GCF project will deliver large and important development benefits whose impacts will increase over time as energy prices rise[51].

131. *Economic co-benefits:*

- Major economic savings (up to 5% of household incomes) due to reduced spending on energy and, as a result, reduction of energy (fuel) poverty among at least 5,000 households.
- Job creation through direct employment in retrofit activities, which would result in approximately 50,000 person-months of paid labour.
- Reduction in Government expenditures on energy (and improved budgetary position of national and sub-sovereign entities) and freeing-up Government budget to be reallocated to other important areas of expenditure such as education, healthcare or reinvestment in EE-related activities. Energy costs constitute a large share of annual expenses incurred by public buildings. In a survey of educational, municipal and healthcare buildings, 35% of those surveyed state that electricity bills amount to 11-20% of their total annual spending. Electricity costs are particularly high for educational buildings, where 27% of respondents report the share of electricity costs to be above 20%. In large public buildings such as hospitals, the total energy savings possible as a result of changing the heating system and better insulating the building is 43%, with an improvement in lighting electricity needs of 80%. In smaller public buildings such as schools, the total energy saving possible as a result of better insulating the building is 49%. This means that retrofits could potentially save public buildings 10% or more of their budget.[52]
- Government's budget deficits reduced.

132. *Social and health co-benefits:*

- Poverty reduction through reduced energy bills: over 30% of Armenian households are considered energy poor, where energy poverty is defined as households spending more than 10% of their budgets on energy.[53]
- Improving occupancy conditions and thermal comfort for tenants and building users

[51] Multiple socio-economic development benefits of EE are documents by IEA (2014), *Capturing the Multiple Benefits of Energy Efficiency*: http://www.iea.org/topics/energyefficiency/energyefficiencyiea/multiplebenefitsofenergyefficiency/ and Copenhagen Economics (2012), *Multiple Benefits of Investing in Energy Efficient Renovation of Buildings*: http://www.renovate-europe.eu/uploads/Multiple%20benefits%20of%20EE%20renovations%20in%20buildings%20-%20Full%20report%20and%20appendix.pdf

[52] Centre for Energy Efficiency (2015), *Final Report: Energy Efficiency Orbits for Transition Economies* http://www.cenef.ru/file/Final%20Report_C2E2_CENEf_June2_2015.pdf

[53] http://r2e2.am/wp-content/uploads/2013/09/SREP-09.16.pdf

- Improved access to educational facilities with suitable thermal environments: currently, many schools close down during the winter because they cannot provide adequate space heating.
- Improved conditions for home-owners, including improved health due to reduced exposure to cold, improved indoor air quality and a healthier indoor environment from the absence of moulds. The World Health Organisation (WHO) estimates that, in 2012, 1,123 deaths in Armenia were attributable to household air pollution from solid fuel use.[54]
- Increase of the lifetime of the buildings;
- Creation of jobs in the construction sector (estimated as 1,700 – see Section E.1.2 and Annex II).

133. Environmental co-benefits

- Improved air quality due to the reduction in use of solid fuel heating: In 2010, 19% of the population of Armenia still used solid fuels in the home (UN MDG Database[55]).
- Noise reduction due to sound insulation: this is beneficial in multi-family apartment buildings, where noise levels can be a major issue and can cause friction between neighbours.
- Reduced need for cooling in summer.

134. *Gender-sensitive development impact (See Annex VIc for Gender Assessment and Action Plan) :*

- Positive impact of EE retrofits on women through improved conditions in the home.
- Improved access of women to investments on energy efficiency building retrofits and to information about building energy efficiency.
- Broader participation of women in opportunities: setting-up of building sector MRV, where users will be trained on data collection and analysis and use of EMIS; training and awareness-raising for commercial banks on performing due diligence of EE retrofit opportunities; development of energy performance standards and a mechanism for continuous update and systematic enforcement
- Out of the 82,200 residents of the single and multi-family buildings that will be directly impacted by the project, an estimated 6,000 people would be female-head of households and their dependents based on the 37% percentage of the female-headed households in 2010 (WB data)[56]. Out of the 128,000 users of public buildings, at least 90,000 will be women, reflecting the much higher share of female employment in the public sector. When targeting vulnerable households, the project will work with the main Armenian social safety net programme, the Family Benefit Scheme. The scheme already prioritizes vulnerable women, such as single mothers, in allocation of state support. Additional indicators and targets will be added to ensure equal access to financial incentives for women during implementation of Component 4.

E.4. Needs of the Recipient

Vulnerability and financing needs of the beneficiary country and population

E.4.1. Vulnerability of country and beneficiary groups (Adaptation only)

135. Climate change is predicted to result in growing energy demand in buildings, predominantly for cooling in summer, and, in parallel, will lead to a rise in energy tariffs[57]. Taken together, these climate change impacts will lead to exacerbation of energy poverty and worsening of health and living conditions, in particular for urban dwellers.

E.4.2. Financial, economic, social and institutional needs

136. **Residential buildings and fuel poverty.** Poverty levels in Armenia have increased since 2007, which is primarily a result of the energy crisis, caused by high dependence on imported energy, and hikes in prices of household energy. Armenia exhibits high energy expenditures relative to income, which results in fuel poverty. About 32% of the population lives below the poverty line against the average national poverty index.[58]

[54] http://apps.who.int/gho/data/node.main.HAPBYCAUSEBYCOUNTRY?lang=en
[55] http://mdgs.un.org/unsd/mdg/Default.aspx
[56] http://data.worldbank.org/data-catalog/gender-statistics
[57] UNDP (2009), *The Socio-Economic Impact of Climate Change in Armenia*: http://www.am.undp.org/content/dam/armenia/docs/Report%20SOI%20of%20CC.pdf
[58] http://data.worldbank.org/country/armenia

137. The World Bank classifies Armenia as a lower middle-income country. In 2014, Gross National Income per capita was US$ 3,810, slightly above the average of other lower middle-income countries. The adverse impacts of the financial crisis, which hit the Armenian economy hard between 2008-2011, was a key factor in the marked increase in the level of poverty in the country, reaching 14.1 per cent in 2009. Poverty in 2011 became deeper and more severe as extreme poverty incidence increased, growing by a factor of 2.3 (or by 2.1 percentage points) relative to the 2008 level; for the very poor, it increased by a factor of 1.6 (or by 7.3 percentage points); and total poverty grew by 26.8% (or by 7.4 percentage points).[59]

138. High energy expenditures relative to income result in energy poverty and, in some cases, electricity poverty. Rising fuel costs and the need for investments in new energy assets and rehabilitation of existing assets will increase the cost of providing electricity. Thus, households currently facing fuel poverty and/or electricity poverty are likely to continue to experience significant pressures on their budgets as energy tariffs continue to rise. On average, Armenian households spend about 8% of their budget on energy, with slightly more than half of this on gas. The poorest quintile spend 7% and 6.5% of their budget on energy overall and heating, respectively.[60] In 2010, there was a tariff increase on gas imports from Russia which led to a nearly 40% increase in the retail gas price for residential consumers. In an analysis of the impacts of this increase, the World Bank estimates that it led to an additional 1.9% of Armenian households being classified as poor. The increase in gas price also led to an increase in the proportion of households using fuelwood for heating, which served to increase indoor air pollution.

139. Due to widespread poverty and inequality prevalent across urban areas in Armenia, at least one-fifth of households are not able to afford the upfront costs of EE retrofits. The project directly targets these groups through focused subsidies to help address the affordability gap and stimulate the demand for EE retrofits.

140. **Public buildings.** Energy costs constitute a large share of annual expenses incurred by public buildings. See Section E.3.1.

141. The Government of Armenia and municipalities are fiscally constrained in terms of available budgets necessary to invest in public building EE retrofits. Whilst some local banks provide credit lines for building EE investments, there is an overall lack of depth and history in the local capital market for finance products in EE building retrofit finance for the range of potential stakeholders, including single-dwelling residential, multi-owner apartments and public buildings.

E.5. Country Ownership

Beneficiary country (ies) ownership of, and capacity to implement, a funded project or programme

E.5.1. Existence of a national climate strategy and coherence with existing plans and policies, including NAMAs, NAPAs and NAPs

142. Improving energy efficiency in the building sector has been assigned a high priority in Armenia's climate, energy, and housing strategies. In particular, achieving thermal modernisation through energy efficiency retrofits is outlined as a national development priority, particularly for multi-apartment buildings. This is particularly clear in the provisions of the National EE Programme (2007), the National Security Strategy (2007), the Concept for Ensuring Energy Security (2013) and the Energy Security Strategy Action Plan (2014), which all identify the EE potential for the buildings sector and provide outlines of technical measures/solutions to be taken. The 10-city Covenant of Mayors agreement also emphasises the critical importance of energy efficiency in the building sector[61].

143. Armenia's Third National Communication to the UNFCCC (2015) provides an up-to-date overview of policies and measures for mitigation of GHG emissions in the country. It identifies public, residential and commercial buildings among the country's top priorities for climate change mitigation: GHG emissions from buildings grew five-fold from 345 $ktCO_2$ in 2000 to 1,723 $ktCO_2$ in 2010. Armenia's UNFCCC Technology Needs Assessment

[59] http://data.worldbank.org/country/armenia
[60] World Bank (2012). *Poverty and Distribution Impact of Gas Price Hike in Armenia*: https://openknowledge.worldbank.org/bitstream/handle/10986/11988/WPS6150.pdf?sequence=1
[61] Please see pp. 12-15 in Annex II for a detailed description of existing plans and policies on climate change and energy efficiency.

(2003) identified heat supply to buildings as one of the main sources of GHG emissions and as having a large potential for energy saving and emission reductions.

144. The project is fully consistent with the Intended Nationally Determined Contribution (INDC) of Armenia approved by the Government in September 2015. Specifically, the INDC identifies "Energy (renewable energy and energy efficiency)" and "Urban Development (building and construction)" among the main sectors included in the national mitigation contributions of the Republic of Armenia. The INDC also identifies "Energy" and "Human Settlements" as being among the most vulnerable sectors to climate change. Further, the INDC emphasises that "the climate change mitigation actions should not reverse the social and economic trends of Armenia, but contribute to the socioeconomic development of the country", which is precisely what this project intends to achieve in the context of climate change mitigation measures in Armenia's building sector. Finally, the INDC recognises that the achievement of the national climate change mitigation target will require "the support of adequate (necessary and sufficient) international financial, technological and capacity building assistance", including from the Green Climate Fund (GCF).

145. This project will promote application of EE principles in Armenia through implementation of corresponding policies and practices in line with the identified priorities for low-emission and climate-resilient development, in particular the following:

- The National Programme for Energy Saving and Renewable Energy (2007) prioritises the alignment of state policy on development, and directs finance and credit policy of the country to energy saving and establishing and maintaining an active market structure for energy efficiency benefits and providing an effective mechanism for market participants.
- Two laws governing energy efficiency: the Law of the Republic of Armenia on Energy (2001) and the Law on Energy Saving and Renewable Energy (2004). These laws define the main terms and principles for the energy sector, including ensuring efficient use of energy; ensuring the energy independence of Armenia; and creating new industries and organising new services, implementing targeted national programmes and applying new technologies in order to promote the development of renewable energy and energy saving.

146. The project and its interventions are strongly aligned with the recently-prepared Government of Armenia and UNDP 'Energy Efficient Public Buildings and Housing in Armenia NAMA' (2014). This NAMA will promote energy efficiency in public buildings and social housing, with a particular focus on energy efficiency measures in new construction, capital renovation and in management of public buildings. The NAMA will assist the cities of Armenia to meet their commitments to reduce GHG emissions from energy consumption by 20% by 2020. The GCF project is specifically designed to support the NAMA in achieving transformational change by targeting the following NAMA objectives:

- Support policy, regulatory, institutional and market transformation, leading to a higher level of energy efficiency of structures and reduced GHG emissions from the building sector.
- Contribute to improved energy performance of public buildings in health, educational, cultural and other sectors, improving comfort levels and cutting public budget allocations for energy bills while improving the overall quality of public services.
- Support the provision of adequate and affordable housing in Armenia using the integrated building design concept, and contribute to reducing the total operational costs of buildings, reducing public costs and costs for the users / clients.
- Contribute to the development objectives of Armenia (environment, economic, and social) related to the construction and building sector.
- Support transformational change to a low-emission development pathway in the longer term.
- Contribute to improving Armenia's energy security.

147. Above all, the project builds on a strategic sequencing of interventions to scale-up its baseline support by extending support to ESCO-based market approaches and financial de-risking, as well as broadening the scope, stringency and enforcement of EE standards for buildings (such as standards for low-energy and nearly zero-energy buildings).

E.5.2. Capacity of accredited entities and executing entities to deliver

148. UNDP is one of the world's largest brokers of climate change grants for developing countries, with a current portfolio of US$ 1.34 billion in mitigation and adaptation grant-financed projects in over 140 countries, supported by co-financing of $6.7 billion. Since 1992, UNDP, in conjunction with government and non-government partners from more than 40 countries, including Armenia, has been developing and implementing projects on EE in buildings. The Global Environment Facility (GEF) has provided over US $161 million in support to 55 projects, supplementing US$ 1 billion in co-financing contributions from national and international partners. The focus of UNDP's work is on removing barriers, creating enabling market environments and catalysing financing for increased investment in energy efficient buildings.

149. UNDP in Armenia was established in 1993 and supports the Government to reach national development priorities and the Millennium Development Goals. UNDP has extensive experience and expertise in climate change mitigation, located in the Armenia Country Office and in regional (Istanbul) and global (New York) UNDP centres.

150. In Armenia, policy and market de-risking support provided by the UNDP-GEF 'Improving Energy Efficiency of Municipal Heating and Hot Water Supply' project has mobilised significant private investment in modernisation of the municipal district heating sector. As a direct consequence of the technical assistance provided, the project was able to leverage US$ 17 million in foreign direct investment for the heat supply sector, US$ 12 million of which had been invested by 2014, for reconstruction (and expansion) of heat supply systems.

151. UNDP has been selected as the implementing partner by the NDA due to UNDP's major contributions in the EE sector of Armenia, including the following:

- Development of the first Armenian NAMA – "Energy efficient public buildings and housing in Armenia", submitted to UNFCCC NAMA Registry in 2014[62].
- Assistance in conducting a needs assessment in the context of the Sustainable Energy for All Initiative (SE4ALL).
- Proven country experience with designing and implementing EE projects in the building sector.
- Implementing a UNDP-GEF project on 'Improving Energy Efficiency of Municipal Heating and Hot Water Supply' that successfully mobilised significant private sector investment (see above for more details).
- Implementing a UNDP-GEF project aimed at 'Improving Energy Efficiency in Buildings', including support to the Armenian Government in development of energy building codes and secondary legislation for EE in buildings.
- Implementing the first-ever Armenian full thermal modernisation of an existing residential multi-apartment building (in Avan district of Yerevan – Figure 1, Annex IIa), as well as social housing in the towns of Goris and Akhouryan (Annex XIII).
- Contribution to mainstreaming innovative legislative changes: amendments to the Laws 'On Energy' and 'On Energy Saving and Renewable Energy', development of two technical regulations related to building EE, introduction of building energy passport and EE label systems, mandatory requirements on EE consideration in construction / reconstruction / capital repairs under public funding (2014), and assistance to the adaption and approval of 14 EN/ISO standards.
- Establishment 2 testing laboratories for insulation materials.
- Energy audits of 15 buildings (residential and public) based on the adopted standard and methodology (Annex XIII).
- EE certificates (the first ones in the country) were issued to 9 buildings (existing and newly built).
- Institutional support for preparation of greenhouse gas national inventories;
- Training of architects and civil engineers on integrated building design approach concepts.
- Elaboration of guidelines for thermal insulation of building envelopes, subsequently approved by the Ministry of Urban Development;

[62] http://www4.unfccc.int/sites/nama/_layouts/un/fccc/nama/NamaSeekingSupportForImplementation.aspx?ID=71&viewOnly=1

- A bilingual textbook, 'Green Architecture: EE and Renewable Energy' (430 pages), was developed and approved for inclusion into the curriculum of the National University of Architecture and Construction of Armenia.
- Development of typical replicable single-family energy efficient building designs and the respective catalogue, approved by the Ministry of Urban Development.
- A pilot project on restoration of the district heating system of the Avan residential area of Yerevan was the key to unlocking the application of cogeneration technology in the heat supply sector of Armenia and to providing the evidence that district heating restoration projects only become feasible and attractive for private investors when support schemes are available.
- Cooperation with Yerevan Municipality in improving the energy efficiency of the street lighting system and establishment of a special purpose EE fund the savings gained from EE initiatives.

152. **Financial status:** UNDP is accredited under 'basic' and 'project management' fiduciary standards of the GCF.

153. **Executing entity:** The programme will be implemented by the Ministry of Nature Protection (MoNP) following the UNDP National Implementation Modality (NIM). MoNP houses the National Focal Point for the UNFCCC and has been coordinating climate change programmes since 1997. MoNP will be responsible for the overall management and supervision of the project to ensure synergy with other GHG mitigation policies and measures in the country. UNDP has enjoyed a long-term and highly successful collaboration with MoNP. MoNP has the capacity and knowledge to guide and oversee the conceptual elements of the project implementation, including professional guidance for achieving the climate change mitigation objectives and overseeing the GHG emissions reduction impacts. MoNP has been the implementing agency for the UNDP-GEF 'Armenia- Improving EE of Municipal Heating and Hot Water Supply' and the UNDP-GEF 'Improving Energy Efficiency in Buildings' projects, and has a proven track-record of successful implementation and cooperation with different ministries and stakeholders. Staff of the Ministry of Nature Protection, other civil servants and Municipal staff who will work on this project will not receive salaries from the project, as this is contrary to the Law on the Civil Service and also UNDP rules.

E.5.3. Engagement with civil society organizations and other relevant stakeholders

154. **Summary of stakeholder consultations**. The project idea was initiated in November 2014, when the results of a UNDP-supported pilot project on EE retrofits in Avan municipality of Yerevan were presented to the Government and donor community. The Government (Municipality of Yerevan and MoNP) expressed strong interest and demand for scaling-up the successful pilot, as did EIB in terms of providing financing for that pilot programme. Between November 2014 and May 2015, two project scoping missions were organised by EIB and UNDP, during which a broad spectrum of partners and stakeholders were involved and consulted. As a result, the project concept was designed and presented to the NDA in May 2015. After discussing the project idea, the NDA provided a Letter of No Objection for the project on 19 May 2015. Further, a donor coordination meeting on energy efficiency was held in June 2015 at which the representatives of the Ministry of Urban Development and Ministry of Energy Natural Resources underlined the need for, and requested support to the donors for, energy-saving measures in the multi-apartment residential sector (see Minutes of the Donor Coordination meeting in Annex XIII). The full proposal was presented and discussed with the NDA on July 20, 2015, prior to the Project Appraisal Committee meeting (in which all key stakeholders from the Government, civil society and private sector participated, including the NDA). In addition, Yerevan Municipality and the Ministry of Nature Protection both provided co-financing letters for this project (Annex IV).

155. UNDP has long-standing and on-going stakeholder consultations with a variety of stakeholders, including Government agencies, NGOs, other development agencies and potential project beneficiaries. Stakeholder consultations during the preparation of the project included one-on-one meetings, as well as a presentation at the Local Project Appraisal Committee (LPAC) meeting (the minutes of the LPAC meeting are presented in Annex VII). Government agencies have been made aware of, and have engaged in, on-going discussions regarding the EE building retrofit project through activities associated with UNDP's existing EE buildings and EE lighting project activities and the well-established UNDP Climate Change Programme Unit coordinated by, and located at, the Ministry of Nature Protection. Other Government agencies that have been engaged include the

Ministry of Urban Development, the Ministry of Territorial Administration, the Ministry of Economy, the Ministry of Energy and Nature Resources, the National Institute of Standards, the R2E2 Fund, the Scientific Research Institute of Energy, and the National University of Architecture and Construction.

156. On 10 June 2015, a donor coordination meeting of the Armenian Working Group on Infrastructure, Energy and Environmental Sustainability was held. The group, co-chaired by the World Bank, UNDP and MoENR, includes a diverse and strategic cross-section of Armenian Government institutions and development partners. The representatives of the Ministry of Urban Development and Ministry of Energy and Natural Resources underlined the need to support energy-saving measures in the multi-apartment residential sector. In addition, the Group concluded that finding and using a common set of strategic and powerful metrics for measuring results will be critical, both for communicating broadly on the economic, environmental and development gains to be made from energy efficiency investments, and for mobilising additional resources and support. Minutes of the meeting are provided in Annex III.

157. Civil society organisations that have been consulted through one-on-one meetings include the Builders' Union of Armenia and the Architects' Union of Armenia. Informal discussions have also been held with potential project beneficiaries identified through engagements with UNDP's on-going activities in Armenia. A full list of stakeholders and their role in project design and implementation are presented in Annex II (pp. 18-20).

158. **Stakeholder coordination**. The primary means of stakeholder coordination will be via the Project Board, which will provide an official, ongoing forum for coordinating the work of various Government agencies and other donors. In addition to work through the Project Board, project staff will maintain regular communication with other agencies regarding their complementary work on energy efficiency building retrofits. See Section 5. 'Implementation and institutional arrangements' for more details on this arrangement.

E.6. Efficiency and Effectiveness

Economic and, if appropriate, financial soundness of the project/programme

E.6.1. Cost-effectiveness and efficiency

159. The project's objective is to deploy an integrated suite of interventions to systematically de-carbonise the existing building stock to realise both greenhouse gas (GHG) emission reductions and sustainable development benefits. Barriers to achieving this include policy, financial, market and technical / capacity barriers. Addressing the policy, market and technical / capacity barriers requires technical assistance, which is provided in Components 1, 2 and 3. In order to address the financial barriers, financing is needed – which is provided in Components 3 and 4.

160. The concessional loan, subject to EIB's due dilligence, will be offered on terms that will not crowd-out private and other public investment. EIB follows the principles of the 'DFI Guidance for Using Investment Concessional Finance in Private Sector Operations'. [63] These principles are: additionality, crowding-in, commercial sustainability, reinforcing markets, and promoting high standards. Taken together, these principles affirm EIB's commitment to provide market-consistent support for commercially sustainable projects in situations where private investment is not forthcoming or requires supplementing.

161. In Component 4, grants from the GCF will be given as a temporary targeted incentive to address the needs of the most vulnerable households. The financial analysis (Annex III) shows that, for those earning below the median household income of US$400, building retrofits are not affordable. For middle- and higher-income households, grants are not needed from an affordability point of view, and will only be used at a low level to overcome early-mover barriers. The grants will support poor and vulnerable households to allow them access to improved thermal comfort and cost / energy savings. Furthermore, incentives in the form of grants are common in developed countries – both in the EU and USA sizeable grants are common practice. KfW, for instance, provides loans together with incentive grants for energy efficiency retrofits in Germany of between 7.5-22.5%, and consequently the proposed incentive grants in Armenia can be considered modest.

162. In the public sector, a small incentive (totalling approximately US$ 1.5 million) is also justified based on the additionality that higher energy efficiency than 'business as usual' brings. This modest incentive will also serve

[63] http://www.ebrd.com/downloads/news/roundtable.pdf

to accelerate the renovation of buildings, thus improving the quality of life of citizens using public facilities such as hospitals and kindergartens.

Please describe the efficiency and effectiveness, taking into account the total project financing and the mitigation/ adaptation impact that the project/programme aims to achieve, and explain how this compares to an appropriate benchmark. For mitigation, please make a reference to E.6.5 (core indicator for the cost per tCO2eq).

163. The proposed project, by focusing on addressing systemic barriers to energy efficiency in existing housing – through policy and financial de-risking – represents an efficient and effective way to address Armenia's future GHG emissions and to meet the country's stated mitigation objectives as stated in the INDC and the sub-national targets set by cities. By providing incentivised financing, the project will also address first-mover costs and kick-start market-based refurbishment of existing housing stock. The effectiveness and efficiency of the proposed activities are characterised by the following key performance indicators:

Key performance indicator	Target
Estimated cost per tonne CO_{2eq} (total investment cost/expected lifetime direct emission reductions)	• US$ 22 / tCO_2e for total project financing • US$ 14.4 / tCO_2e for GCF financing
Estimated cost per tonne CO_{2eq} (total investment cost/expected lifetime direct and indirect emission reductions)	• US$ 5-6 / tCO_2e for total project financing • US$ 3.4-3.6 / tCO_2e for GCF financing

164. An appropriate benchmark for the total investment cost/expected lifetime direct emission reductions is provided by data from a recent report on energy efficiency retrofits in residential buildings in the Western Balkans.[64] For Albania, which has an electricity system with a grid emission factor similar to that of Armenia, the calculated cost per tonne of lifetime emission savings is between US$ 178-897/tCO_2e, depending on the type of building and the type of measures considered. For some CDM projects, data are available that have enabled calculation of the investment cost per tCO_2[65]. Examples include:

Project	Period over which emission reductions are counted (year)	Investment US$/$tCO_2$
Moldova Energy Conservation and Greenhouse Gases Emissions Reduction: This programme of 27 projects will improve efficiency and promote switching from coal/mazut to natural gas for heating public buildings	10	3,452
Massive introduction of Compact Fluorescent Lamps (CFLs) to Households in Ecuador	10	45
Energy Efficiency Measures in Office Building at Kalina of Ivory Property Trust (India)	10	250
Energy Efficiency Measures at MindSpace Building No 6 at Hyderabad	10	133
Energy Efficiency Measures at Terminal T3 (India)	7	1,002
Installation of Natural Gas-Based Combined Cooling, Heating and Power (CCHP) Systems in DLF Building 5 in Gurgaon, India	7	3,176
Energy Efficiency Measures at MindSpace Building No 9 at Hyderabad	10	82
Energy Efficiency Measures at MindSpace Building No 14 at Hyderabad	10	167

165. As can be seen, the cost per tCO_2e of building energy efficiency projects can vary widely (see also the sensitivity analysis in Annex D of the UNDP Project Document – Annex II). This cost will depend to a large extent on the measures to be implemented and on the carbon intensity of the local electricity grid. In the literature on energy efficiency, the cost presented is often the abatement cost, in which the energy cost savings are subtracted from the sum of investment and O&M cost. The abatement value for energy efficiency measures is often negative. This justifies the large difference between the direct emission reductions as a result of investments made in the project and the indirect emission reductions, which include investments that will be made due to the barrier removal and market creation by the project. Energy efficiency projects are justified by the fact that, although the

[64] https://www.energy-community.org/portal/page/portal/ENC_HOME/CALENDAR/Other_Meetings/2015/03_Jun and https://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/3284024/Guidance_Note_on_Residential_Energy_Efficiency_programs.pdf
[65] CDM Pipeline, www.cdmpipeline.org

direct cost of emission reductions may be relatively high, once existing barriers have been removed private and other public investment will follow that have the potential to lead to very large emission reductions.

E.6.2. Co-financing, leveraging and mobilized long-term investments (mitigation only)

Please provide the co-financing ratio (total amount of co-financing divided by the Fund's investment in the project/programme) and/or the potential to catalyze indirect/long-term low emission investment.

Please make a reference to E.6.5 (core indicator for the expected volume of finance to be leveraged).

Key performance indicators	Target
Co-financing ratio (total amount of the Fund's investment versus confirmed co-financing)	2:1
Leveraging ratio (total amount of the Fund's investment versus expected volume of finance to be leveraged)	1:5

166. The project's co-financing ratio, i.e. the total amount of the Fund's investment versus confirmed co-financing, stands at 2:1. There is also a significant potential to catalyse long-term low-emission investment (see Section E.6.5 for details), as reflected in the significantly higher project leveraging ratio (i.e. the total amount of the Fund's investment versus expected volume of finance to be leveraged), which stands at 1:5.

167. The project will undertake a number of activities beyond simple investments that will stimulate the market for energy efficiency in the residential and public building sectors. Therefore, investments not within the direct control of the project will be triggered. The indirect investment catalysed has been estimated using the GEF methodology for calculating indirect emission reductions. The total market / penetration is as given in the table below.

168. Total 10-year market size was estimated based on the following:

- The total numbers of each building-type in the country.
- The market-penetration rates over the course of 10 years after project completion if the project is carried out.
- The impact on this market development of the GCF project, using a relevant 'causality factor'. For this calculation, a level 2 causality factor is used (40% – modest).

	# of units in the country	Estimated 10-year market penetration rate[66]	Investment per unit (US$)	Total investment (million US$)
Single-family individual buildings	392,590	20%	10,000	785.1
Multi-family apartment buildings	4,300	20%	120,000	103.2
Public buildings (complex demand- and supply-side renovation, such as for a hospital)	180	50%	250,000	22.5
Public buildings (simple demand-side measures, such as for a school)	2,326	50%	95,000	110.5
Causality factor	-	-	-	40%
Total investment catalysed	**-**	**-**	**-**	**408.5**

[66] Market penetration rate is a measure of the number of sales or adoption of a product or service compared to the total theoretical market for that product or service – i.e. the number of households / apartment buildings / hospitals / schools that have adopted energy efficiency measures versus the total number of such buildings in the country.

E.6.3. Financial viability

Please specify the expected economic and financial rate of return with and without the Fund's support, based on the analysis conducted in F.1.

169. The economic rate of return of the project is given in the following table:

Key performance indicator	Overall	Houses (single dwelling)	Apartments (9-story, 36 dwellings)	Public buildings – demand-side	Public buildings – demand- and supply-side
Economic rate of return	12.7%	4.5%	12.9%	13.6%	17.0%

170. The investments in public buildings have the greatest economic return based on the technical and financial models used. At 12.7% for the overall project portfolio, the overall project has a positive economic net present value.

171. All GCF funds will be used as grants – either for technical assistance (Components 1, 2 and 3), or for investment incentives. The financial rate of return is given for the overall project and each sub-sector in the table below:

Key performance indicator		Overall	Houses (single dwelling)	Apartments (9-story, 36 dwellings)	Public buildings – demand-side	Public buildings – demand- and supply-side
Average level of grant from GCF		13% grant (average)	9% grant (average)	22% grant (average)	5% grant (average)	8% grant (average)
Financial rate of return	With the Fund's support	9.7%	1.7%	9.5%	11.7%	13.8%
	Without the Fund's support	7.5%	0.5%	5.6%	10.2%	12.8%

172. The GCF funds increase the financial rate of return from 7.5% to 9.7% for the project as a whole. The effect on the IRR for sub-sectors is proportional to the grant amount, with the impact being greatest for apartment buildings. While the IRR for individual houses is very low, experience of Central and Eastern European countries show[67] that most residents do not take financial performance into account when investing in building renovation. For this reason, the market at the individual house level is considered viable when incentivised with a grant. While the GCF grants will come to an end at the end of the project, the TA activities will address systemic barriers, including the creation of local incentives – a model very common in the EU and the USA.[68]

Please describe financial viability in the long-run beyond the Fund intervention.

173. The project includes technical assistance activities that focus on addressing systemic barriers to the market for energy efficient residential and public buildings. This includes the development of policy, legislation and incentives to support low-income households to invest in energy efficiency. Through the use of grants, the market will be transformed such that, after the Fund intervention, additional investment in the market will continue to take place at a faster rate than before Fund intervention.

[67] Cirman A *et al* (2011), *What Determines Building Renovation Decisions?* http://www.enhr2011.com/sites/default/files/Paper-AndrejaCirman-WS11.pdf

[68] See for instance http://aceee.org/files/proceedings/2012/data/papers/0193-000422.pdf, http://www.epa.gov/cleanenergy/documents/suca/program_incentives.pdf and http://www.inspirefp7.eu/wp-content/uploads/2014/08/WP2_D2.1b_20140523_P18_Policies-and-incentives-relevant-to-retrofit.pdf and Slide 10 of https://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/3736187/KfW_3_pillar_approach_EE_public_buildings.pdf

174. The provision of a very modest amount of grant funding is needed to jump-start the EE retrofits market. The amount and share of grants in total investment will be progressively reduced; together with measures to reduce the risks of EE investment (i.e. enactment of supportive policies and work with domestic banking sector), this strategy will ensure that the need for grant financing is minimised by the end of the project's 6-year implementation period. It is, however, likely that a certain group of vulnerable households will continue to be in need of grant support and, therefore, the project will work with the Armenian social support system to ensure that ownership of this grant support shifts to internal Armenian social security funding. UNDP has successful experience with introducing such policy changes: for example, in Kazakhstan, UNDP worked with the government to expand the coverage of the state social support system to include grants to vulnerable households for EE measures in homes. A similar approach will be adopted in Armenia.

E.6.4. Application of best practices

Please explain how best available technologies and practices are considered and applied. If applicable, specify the innovations/modifications/adjustments that are made based on industry best practices.

175. Best available technologies have been considered and will be applied. The energy efficiency parameters of the materials and measures will be higher than local standards, and reflect best EU practices. The following technical parameters are proposed:

- EE insulation for outer walls – final U-value (W/m^2K) of 0.75 or better
- EE windows – U-value (W/m^2K) of 2 or better
- Roof insulation – final U-value (W/m^2K) of 0.25 or better

176. Measures included in the analysis for residential buildings are:

- Insulation of outer walls and of the roof
- Energy-efficient windows
- Installation of windows and doors in staircases and landing areas of apartment buildings

177. Measures included in the analysis for public buildings:

- Insulation of the outer walls, of the cavities beneath the windows and of the roof
- Energy-efficient windows and doors
- Heating system replacement with a condensing gas boiler system
- Thermostatic valves for the heating system
- Hydraulic balance valves for the heating system
- CFL or LED lighting
- Improved management

178. Best international practice is followed in terms of project design. The project includes both technical assistance focused on permanent reduction and removal of market barriers and reduction of risks, coupled with incentivised commercial lending in conjunction with an International Financial Institution. The demonstration effect in residential and public sector buildings and within involved banks, coupled with systemic barrier removal activities, is considered best practice and a cost-effective means to create markets: this is an approach followed by Multilateral Development Banks around the world.[69]

E.6.5. Key efficiency and effectiveness indicators

GCF core indicators	Estimated cost per t CO_2 eq, defined as total investment cost / expected lifetime emission reductions (mitigation only)

[69] In the Eastern European region, the most notable development bank using this approach is the EBRD – see www.ebrdseff.com

(a) Total project financing	US$ 29,820,000[70]	
(b) Requested GCF amount	US$ 20,000,000	
(c) Expected lifetime emission reductions overtime	1,389,677 tCO_2eq	
(d) Estimated cost per tCO_2eq (d = a / c)	US$ 22 tCO_2eq	
(e) Estimated GCF cost per tCO_2eq removed (e = b / c)	US$ 14.4 / tCO_2eq	
	Low	High
(f) Expected indirect and direct lifetime emissions (tCO_2eq)	5,558,709	5,827,059
(g) Estimated cost per tCO_2eq (g = a / f) (US$/ tCO_2eq)	5.12	5.36
(h) Estimated GCF cost in US$ / tCO_2eq removed (h = b / f)	3.43	3.60

A detailed bottom-up analysis of model buildings in Armenia has been conducted. Four models were developed, two in the residential sector (one for an individual single-family house and one for a multi-family apartment building) and two in the public sector (a hospital and a school). Building parameters and energy characteristics were determined for each type of building. A set of efficiency measures was then applied and the energy needs and potential savings for these measures calculated. Total energy savings were estimated taking into account a rebound factor. Using the model buildings as a guide to potential energy and GHG reductions, the estimated total emission reductions from the project investments were calculated. The GHG emissions analysis makes use of the Global Environment Facility (GEF) methodology for energy efficiency projects. GHG emission coefficients were taken from the GEF GHG calculation worksheets for natural gas and electricity. For electricity, the grid emission factor is taken from the IGES database and is based on the CDM combined margin approach. Total direct emission reductions are the sum of the reductions achieved in the four building categories evaluated.

The project will undertake a number of activities beyond simple investments that will also stimulate the market for energy efficiency in the residential and public building sectors. Therefore, there will be indirect energy savings triggered by investments not within the direct control of the project. These are estimated using bottom-up and top-down approaches based on the GEF methodology. For bottom-up emission estimates, the estimated direct reductions are multiplied by a replication factor – with the expectation that the volume of investments and GHG emissions reductions will increase by a factor of 3 over a 10-year period after project completion due to the project intervention. This is a modest replication factor according to GEF practice. To estimate the indirect GHG emission reductions using a top-down methodology, total 10-year market size was estimated.

The full methodology used for calculating the factors is given in Annex D of the UNDP project document.

Please describe how the indicator values compare to the appropriate benchmarks established in a comparable context.

See the discussion of the appropriate benchmark for cost per tCO_2 in Section E.6.1

Expected volume of finance to be leveraged by the proposed project/programme and as a result of the Fund's financing, disaggregated by public and private sources (mitigation only)

[70] Note that the amount of project cost indicated here does not include potential EIB loan and own funds from residential borrowers of credit lines (potential parallel financing)

The expected volume of finance to be leveraged by the proposed project as a result of the Fund's financing is US$ 102.82 million. Of this, US$ 86 million will be from the EIB loan and private sector (from residents, once loans are repaid), and US$ 20 million will be public investment (from national and city governments, once loans are repaid) in energy efficiency retrofits, representing a total leveraging ratio of 1:5.

The volume of finance to be leveraged is the sum of all finance for the project.

Source of financing	Amount, US$
GCF	20,000,000
Confirmed co-financing	
Yerevan Municipality	8,000,000
UNDP	1,420,000
MoNP	400,000
TOTAL Co-financing	**9,820,000**
Potential parallel financing/leverage	
EIB	86,250,000
Residents	6,750,000
TOTAL Potential parallel financing/leverage	**93,000,000**
TOTAL Volume of finance	**102,820,000**

The financial analysis that was used to arrive at the values of leveraged financing is given in Annex D of the UNDP Project Document.

Please describe how the indicator values compare to the appropriate benchmarks established in a comparable context.

The GEF has indicated a level of ambition for the overall GEF portfolio to reach a co-financing ratio of at least 6:1 (total co-financing to total GEF resources) for the Sixth Replenishment of the GEF Trust Fund (GEF-6)[71]

Other relevant indicators (e.g. estimated cost per co-benefit generated as a result of the project/programme)	

[71] GEF/C.46/09, 2014.

**** The information can be drawn from the project/programme appraisal document.***

F.1. Economic and Financial Analysis

Please provide the narrative and rationale for the detailed economic and financial analysis (including the financial model, taking into consideration the information provided in section E.6.3).

179. The project will accelerate the market for energy efficient retrofits of buildings in: a) the residential sector, and b) the public sector. In the residential sector, two typical building models are considered: a single-family house and a multi-owner apartment building (see Section F.2 below). In the public sector, two technical scenarios are considered for the same building: a retrofit with only demand-side (energy-saving) measures, and a retrofit with both demand- and supply-side (fuel-switch) measures.

180. Starting with the investment costs and modelled energy and financial savings, a bottom-up financial and economic model has been developed for each building-type. The fuel prices (for natural gas and electricity) are increased annually at a rate of 1% per year. This is a conservative figure: until recent public protests broke out, the Government's plan was for electricity prices to increase by 16% in 2015 alone. Investment parameters include own funds (10% for residential buildings and 20% for public building), an incentive grant and a loan, and sensitively analysis has been carried out for these parameters. The simple payback, internal rate of return (IRR) and net present value (NPV) are determined using standard financial modelling.

181. The choice of discount rate for the NPV calculations is guided by which party is being affected and what the time value of money is for that party.[72] The time value of money for a household varies considerably according to household members' perception of risk and the perception of likelihood of returns on the investment. There is a difference in investment in energy efficiency in the residential sector between individual households and multi-owner buildings. For investments in energy efficiency in Armenia at the building level in multi-owner buildings, the discount rate is higher due to factors such as lack of awareness amongst the owners, lack of access to financing, inertia in the decision-making process, perceptions that the building space outside of the apartment is not the owner's individual responsibility, coordination costs, absentee owners, and the perceived risk of free riders. This indicates that there should be a difference in the appropriate discount rate to be used in any financial modelling. The justification for using particular discount rates is provided below:

- **For households (houses and dwellings within apartment buildings)**, the discount rate represents the opportunity cost of other investing options. As a proxy for this opportunity cost, the interest rate on savings deposits in Armenia is used (10.4% in 2014).[73] The discount rate used in calculations is 10%.
- **For residential building-level investments**, the discount rate chosen is 17.5%:
  - For building-level investments, the perception of risk is higher and the perception of likelihood of returns on the investment is lower. This is generally due to the perception that collective action may not succeed. Additionally, there is general inertia of apartment owners to invest together. This is demonstrated by the lack of investment at the apartment-building level in countries even where the legal framework is already conducive to collective decision-making (for example, Croatia, Serbia and Montenegro[74]).
  - This figure is consistent with that given in the EU analysis, 'Study evaluating the current energy efficiency policy framework in the EU and providing orientation on policy options for realising the cost-effective energy efficiency/saving potential until 2020 and beyond'[75], which uses 17.5%. This figure is also consistent with that used in the EU's PRIMES model for households[76]. While, clearly,

[72] See discussions in, for example Woolf *et al*. (2012), *Best Practices in Energy Efficiency Programme Screening: How to Ensure that the Value of Energy Efficiency is Properly Accounted For*. Available at http://www.synapse-energy.com/sites/default/files/SynapseReport.2012-07.NHPC_.EE-Program-Screening.12-040.pdf
[73] See World Bank (2015) Data: Deposit interest rate (%) http://data.worldbank.org/indicator/FR.INR.DPST/countries
[74] World Bank (2014), *Western Balkans: Scaling-up Energy Efficiency in Buildings*: https://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/3282025/Final_Report_Scaling_Up_Energy_Efficiency_in_Buildings_in_the_Western_Balkans.pdf
[75] https://ec.europa.eu/energy/sites/ener/files/documents/2014_report_2020-2030_eu_policy_framework.pdf
[76] See page 87 of this report:

perceptions of risk are far higher in Armenia than in the EU (as reflected by high interest rates on savings accounts, loans, etc.), this conservative figure has been used in the analysis.

- **For public buildings**, a discount rate of 10% is used.

182. The economic analysis takes into account increasing fuel prices, an increase in property values (for residential buildings), and an economic benefit of reduced GHG emissions valued at $25 per tonne of CO_{2eq} reduced.[77] A detailed financial and economic model has been prepared for each building-type (at the building level), and combined into an overall project-wide integrated financial model. This model is available in Annex III.

Based on the above analysis, please provide economic and financial justification (both qualitative and quantitative) for the concessionality that GCF provides, with a reference to the financial structure proposed in section B.2.

183. The US$ 20 million of GCF grants will be composed of funding used for technical assistance (Components 1, 2 and 3) to remove market and policy barriers to EE building retrofits; and for incentives (Component 4) to address the needs of vulnerable households by making loans for EE building retrofits more affordable. The technical assistance provided in Components 1, 2 and 3 are grant-funded since they address and remove systemic risks and overcome market barriers.

184. In Component 4, grants from the GCF will be given as a ***temporary targeted incentive***. They will be used to target vulnerable households. The grants will support poor and vulnerable households to allow them access to improved thermal comfort and cost / energy savings. Incentives in the form of grants are common in developed countries – both in the EU and USA, sizeable grants are common practice.[78] In Germany, for instance, KfW provides loans together with incentive grants for energy efficiency retrofits of between 7.5-22.5%[79], and consequently the proposed incentive grants in Armenia can be considered modest. A total of US$ 12.5 million in incentive grants will be used to support vulnerable households in the ***residential sector***.

185. In the public sector, a small incentive (totalling around US$ 1.5 million) is also justified based on the additionality that a higher level of energy efficiency will be promoted than under the 'business as usual' scenario. In addition, the modest incentive will also serve to accelerate the renovation of buildings, thus improving the quality of life of citizens using public facilities such as hospitals and kindergartens.

F.2. Technical Evaluation

186. The technical evaluation[80] has been carried out using bottom-up building energy models (4 models in total), using empirical Armenian data from building energy audits and feasibility studies undertaken by UNDP and the R2E2 Fund. The models account for building geometry, climatic conditions and building use. For each building-type, a typical Armenian building is modelled, and the most common fuel and energy characteristics used. Investment costs are based on installed costs of energy-efficient materials in the Armenian market. The before and after energy needs and costs are determined for each building-type.

187. The technical measures selected have high energy efficiency parameters comparable to those used in the EU (see Section E6.4 above). From a technology perspective, all these measures are well known and proven over decades of experience. While energy performance characteristics are higher than commonly used in Armenia, the base technology is well known (wall insulation, efficient windows, roof insulation, etc.), so technology risks are very low. The measures proposed offer the following energy savings:

https://ec.europa.eu/energy/sites/ener/files/documents/2014_report_2020-2030_eu_policy_framework.pdf

[77] This value is within the lower end of the range of estimations used by the U.S. Environmental Protection Agency for the Social Cost of CO_2 for 2015 which were (in 2011 Dollars) USD 12 per tonne using a 5% average discount rate, USD 39 per tonne using a 3% average discount rate and USD 61 per tonne using a 2.5% average discount rate: http://www.epa.gov/climatechange/EPAactivities/economics/scc.html

[78] See for instance http://aceee.org/files/proceedings/2012/data/papers/0193-000422.pdf, http://www.epa.gov/cleanenergy/documents/suca/program_incentives.pdf and http://www.inspirefp7.eu/wp-content/uploads/2014/08/WP2_D2.1b_20140523_P18_Policies-and-incentives-relevant-to-retrofit.pdf

[79] See slide 10 of https://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/3736187/KfW_3_pillar_approach_EE_public_buildings.pdf

[80] See Annex II (pp. 61-96), Annex IIa and Annex XIII for details about the technical evaluation.

Technical performance summary	Houses (single-dwelling)	Apartments (9-story, 36 dwellings)	Public buildings – demand-side	Public buildings – demand- and supply-side
Modelled energy savings	77%	76%	43%	49%
Rebound factor used to correct for suppressed demand	20%	20%	40%	40%
Savings used in financial and economic calculations	62%	61%	26%	29%

F.3. Environmental, Social Assessment, including Gender Considerations

188. The project will eliminate policy, financial, market and technical barriers to create an enabling environment for investments in energy-efficient building retrofits. The interventions from the technical assistance of the GCF are mainly capacity building. The $14 million investment by the GCF accounts for approximately 11% of the total investment cost ($122.82 million), or about 16% compared to EIB's potential parallel contribution of $86.25 million. Building retrofits may cause impacts such as generation of waste and safety risks to the community from installation and dismantling, but these are minimal, temporary and can be easily mitigated.

189. The overall outcome of the project will be reduction in energy consumption of the building sector, with associated reductions in GHG emissions and wider opportunities for gender mainstreaming in capacity building, financing and employment (about 1,700 jobs will be created).

190. The project has completed the UNDP social and environmental screening procedure (see SESP attached as Annex VI). This screening was undertaken to ensure this project complies with UNDP's Social and Environmental Standards. The overall social and environmental risk category for this project is: **Low**.

191. Given the type and scale of the interventions proposed by the project, no EIA is required by the Government (as confirmed in the Letter from the MoNP, Annex VIb).

192. The UNDP SESP template used to classify the project follows the current best international practice (i.e. EBRD, EIB, ADB, WB, etc.), whereby similar projects (i.e. involving EE building retrofits) have been classified by IFIs as 'low-risk'. For example, this was the case for a recent €137 million EIB project in Romania ('Bucharest Thermal Rehabilitation', as well as the WB-GEF US$ 10.9 million grant for the Municipal Energy Efficiency Project in Armenia (approved in 2012). The EIB investment in Romania and the World Bank's project in Armenia funded identical technical measures to what are proposed under the current proposal: i.e. thermal rehabilitation of multi-storey residential and public buildings, including such physical interventions as insulation of walls, basements and attics, repair/replacement of external doors and windows, installation of reflective surfacing of walls behind radiators, replacement of boilers and heating systems. Consequently, the project has been assigned a 'low' category in UNDP's E&S Screening template based on consultation with the Government to ensure consistency in environmental and social assessments among project partners and similar initiatives in Armenia and elsewhere. However, the SESP recognises that categorisation of projects is an iterative process; should stakeholders raise concerns about the project's social and environmental aspects during implementation, the 'low risk' designation will be carefully reviewed.

F.4. Financial Management and Procurement

Describe the project/programme's financial management and procurement, including financial accounting, disbursement methods and auditing.

193. The financial management and procurement of this project will be guided by UNDP financial rules and regulations[81] and the NIM Guidelines[82]. Further guidance is outlined in the financial resources management section of the UNDP Programme and Operations Policies and Procedures, available at https://info.undp.org/global/popp/frm/Pages/introduction.aspx.

194. NIM Guidelines identify 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.

195. UNDP has comprehensive procurement policies in place as outlined in the 'Contracts and Procurement' section of UNDP's Programme and Operations Policies and Procedures (POPP). The policies outline formal procurement standards and guidelines across each phase of the procurement process, and they apply to all procurements in UNDP. See here: https://info.undp.org/global/popp/cap/Pages/Introduction.aspx

196. In line with NIM Guidelines, UNDP will ascertain the national capacities of the Responsible Parties (the PIU of the Municipality of Yerevan, once established and operational, and the EPIU of the MoNP) by undertaking an evaluation of capacity following the Framework for Cash Transfers to Implementing Partners (part of the Harmonised Approach to Cash Transfers - HACT).

197. In line with NIM Guidelines and cash transfer modalities, procurement under the project will be undertaken by either Responsible Parties (EPIU of the MoNP and Municipality of Yerevan's 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 have to be compatible with UNDP's financial and procurement standards. Specifically, according to the 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".

198. Project will be audited following the UNDP financial rules and regulations noted above and applicable audit guidelines and policies along with any specific requirements agreed in the AMA with the GCF. In line with NIM rules, periodic (quarterly) financial reviews of project expenditures will be conducted to ensure funds are used for the purpose intended in the approved proposal.

199. The project will apply international accounting financial reporting standards for the project reporting.

200. UNDP will ensure compliance with the GCF's Fiduciary Principles and Standards, including anti-corruption and AML/CFT requirements.

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

[82] 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

G.1. Risk Assessment Summary

Please provide a summary of main risk factors. Detailed description of risk factors and mitigation measures can be elaborated in G.2.

201. Technical and operational risks include risks related to lack of knowledge and skills, and the under-developed nature of the ESCO market. Financial risks include those related to the level of energy prices and the availability of loans for EE investments. Social and environmental risks to the project are minor. An additional risk relates to the Government's commitment to adopt and implement legislation. The most significant risks are the financial risks. These will be mitigated through the creation of financial mechanisms as part of the project.

G.2. Risk Factors and Mitigation Measures

Please describe financial, technical and operational, social and environmental and other risks that might prevent the project/programme objectives from being achieved. Also describe the proposed risk mitigation measures.

Selected Risk Factor 1

Description	Risk category	Level of risk	Probability of risk occurring
Government does not commit to refine and implement new building legislation	Other	Medium	Very low

Mitigation Measure(s)

202. This risk is mitigated through UNDP's established working relationship with the Government to develop laws and building codes. The Government clearly recognises the need for energy efficiency improvements in buildings and is committed to introduce appropriate regulations. Illustrating this, in December 2014 a Resolution was adopted that makes energy efficiency as well as cost-effective renewable energy solutions mandatory for integration in construction / reconstruction projects. Development and enforcement of an ambitious regulatory framework is also a central element of the NAMA on 'Energy efficient public buildings and housing in Armenia'. The Government has requested UNDP support to help ensure development and implementation of legislation in line with international best practices on building energy efficiency. The GCF project will be implemented by a Government body, the Ministry of Nature Protection, which is responsible for UNFCCC implementation in Armenia and which is also the GCF NDA.

Selected Risk Factor 2

Description	Risk category	Level of risk	Probability of risk occurring
Government does not continue to bring energy prices in line with market prices	Financial	High (>50%)	High

Mitigation Measure(s)

203. Government policy, demonstrated through significant growth in energy prices over the past 5 years, clearly shows positive intentions: natural gas prices increased by roughly 170% between 2008 and 2014, and the electricity tariff increased by 35% (day-time) and 41% (night-time). However, at the time of writing (July 2015), large protests are ongoing in Yerevan due to proposed tariff increases, putting into question future developments on this front. However, even with modest 1% increase per year, as conservatively assumed in the financial analysis, EE retrofits can represent a viable investment alternative (provided other barriers are eliminated).

Selected Risk Factor 3

Description	Risk category	Level of risk	Probability of risk occurring

Knowledge and skills among local professionals are too limited to support the growth of the market	Technical and operational	Medium	Low
Mitigation Measure(s)			
204. This risk will be mitigated through provision of technical assistance to build capacities of various local stakeholders involved in building design, construction and operation. Capacity building will mostly take place through practical experience gained as a result of the financial incentives under Component 4. Thus, technical assistance will be provided through a 'learning-by-doing' approach whereby local specialists will work together with international consultants to deliver energy efficiency projects in residential buildings.			
Selected Risk Factor 4			
Description	Risk category	Level of risk	Probability of risk occurring
Lack of demand for building sector energy efficiency retrofits	Financial	Medium	Low
Mitigation Measure(s)			
205. UNDP's prior work in Armenia shows that demand exists where conditions are supportive. Through the de-risking activities of the project, supported by a temporary financial incentive, demand is expected to be significant. For the public sector, energy audits show that there is a reasonable payback period (between 5-15 years) for EE measures and this indicates that, when market barriers are addressed, the underlying investments should be bankable. For residential investments, decisions are seldom made solely on the basis of financial returns (they are primarily driven by comfort). However, the models also indicate reasonable returns on investment. Demand for retrofits in the context of the GCF project has been confirmed by the commitment of the Municipality of Yerevan (home to one-third of the Armenian population), as reflected in its co-finance letters (Annex IVc).			
Selected Risk Factor 5			
Description	Risk category	Level of risk	Probability of risk occurring
High levels of default on loans for the residential sector	Financial	Medium	Low
Mitigation Measure(s)			
206. Investments in building renovation have proven to have low levels of default.[83] The incentive and other project activities will support the viability of investments on a temporary basis and thus reduce costs, especially for vulnerable residents; since local banks will still have exposure to some risk, moral hazard will be avoided.			
Selected Risk Factor 6			
Description	Risk category	Level of risk	Probability of risk occurring
The Government will have spending and procurement responsibilities for the project under the AWPs and quarterly disbursements of the NIM modality	Financial	Medium	Very low
Mitigation Measure(s)			
207. HACT assessments will be conducted prior to project implementation to identify and resolve potential (if any) financial management deficiencies in the Implementing Entities. The constraints on Government spending imposed by NIM (only quarterly advances, etc.). Regular reporting on financial and other operational aspects of the project through PIRs and also the MTR and TE. Annual independent financial audits.			
Selected Risk Factor 7			

[83] http://siteresources.worldbank.org/INTEAPASTAE/Resources/FinancingEnergyEfficiency.pdf, in particular page 174 for Hungary, 209 for Romania

Description	Risk category	Level of risk	Probability of risk occurring
Lenders remain unwilling to provide loans for energy efficiency investments	Financial	Medium	Medium
Mitigation Measure(s)			
Please describe how the identified risk will be mitigated or managed. Do the mitigants lower the probability of risk occurring? If so, to what level? 208. The global economic recovery is resulting in a growing willingness of lenders to offer financing for energy efficiency investments in Armenia, although the building sector is currently virtually unaddressed. While this project will not be able to eliminate macroeconomic risk, the financial mechanisms to be supported will provide lenders with ample learning opportunities. Experience in other countries shows that this learning, when accompanied by technical assistance to address systemic barriers, leads to sustained lending since lenders and borrowers will be shown the benefits of energy efficiency investments.			
Selected Risk Factor 8			
Description	Risk category	Level of risk	Probability of risk occurring
Lack of developed ESCO market prevents achievement of reductions of energy intensity in public buildings	Technical and operational	High (>50%)	Low
Mitigation Measure(s)			
209. Armenia has a number of quasi-ESCO companies, but their operations have, to date, been limited to the public sector only, and there are deficiencies in the regulations regarding performance-based contracting models with the public and residential building sub-sectors, which pose a risk. The gradual introduction of performance-based contracts and associated policy changes, combined with capacity building, will help to mitigate this risk.			
Selected Risk Factor 9			
Description	Risk category	Level of risk	Probability of risk occurring
Climate change (such as increases in winter temperature reducing the demand for space heating) can make investments in EE building retrofits less attractive	Social and environmental	Low (<5% of project value)	Low
Mitigation Measure(s)			
210. The climate-related risk of the project is considered very low because long-term climate impacts (i.e. temperature extremes, higher average temperatures and reduced precipitation) will be directly addressed through housing units that will be more energy-efficient and comfortable (and yet more affordable) at both high and low temperatures. While average winter temperatures are projected to increase, since the 1961-1990 average winter temperature was -5.3°C, even with a significant increase in temperature there will still be a considerable need for heating. It should be noted that increases in temperature will reduce demand for heating and increase demand for cooling. Since cooling is electrical and more costly, this may increase demand for retrofits.			
Selected Risk Factor 10			
Description	Risk category	Level of risk	Probability of risk occurring
Environmental and social risks	Social and environmental	Low (<5% of project value)	Low
Mitigation Measure(s)			

211. No substantial environmental and social risks have been identified that the project may face. The project will be implemented in accordance with UNDP's environmental and social policies to ensure that any environmental risks are minimised. The Government has determined that the environmental and social risks posed by the project are sufficiently small that an ESIA is not required under national legislation, and has issued a formal letter accordingly – see Annex VI.

Selected Risk Factor 11

Description	Risk category	Level of risk	Probability of risk occurring
The project may discriminate against women with regard to access to opportunities and benefits	Social and environmental	Low (<5% of project value)	Low

Mitigation Measure(s)

212. The project will analyse any gender-based differences in access to financing and capacity building, and will involve an in-country gender expert in developing gender-disaggregated data and indicators to ensure an equitable gender representation in the selection process for financing, focus group discussions and training. The project will ensure female-headed households are among project participants to an extent at least representative of the general population.

Selected Risk Factor 12

Description	Risk category	Level of risk	Probability of risk occurring
Retrofit works and failure of structural elements from building retrofits may pose safety risks to communities	Social and environmental	Low	Low

Mitigation Measure(s)

213. Only registered contractor(s) will be allowed to implement EE building retrofits. Contractor(s) will be required to conduct orientation and training for workers on EE building retrofits, particularly multi-family apartment buildings and public buildings.

Selected Risk Factor 13

Description	Risk category	Level of risk	Probability of risk occurring
Duty-bearers do not have the capacity to meet their obligations such as in collecting baseline data for the EMIS and in managing EE building retrofit financing projects	Social and environmental	Low (<5% of project value)	Low

Mitigation Measure(s)

214. Component 1 will include capacity building on establishing MRV, data collection and analysis, and procurement / installation of EMIS. Component 2 will support broader legislative reforms to develop building codes, energy auditing, energy certification and labelling for existing buildings, multi-owner building management, payment enforcement, and a framework for energy efficiency retrofits that will significantly contribute to building the necessary capacity.

Selected Risk Factor 14

Description	Risk category	Level of risk	Probability of risk occurring
Potential for excluding affected stakeholders from participation	Social and environmental	Low (<5% of project value)	Low

Mitigation Measure(s)

215. Consultations have been undertaken to determine the stakeholders and their roles during project implementation. These consultations will continue throughout the project cycle. Consultations on various components of the project will be designed to be gender-sensitive, inclusive and responsive to the needs of

	the stakeholders identified. A mechanism to deal with potential conflict issues during implementation will be incorporated in the project design and contracts for commercial firms (e.g. architects etc.) will be through public procurement according to UNDP rules.

Selected Risk Factor 15			
Description	Risk category	Level of risk	Probability of risk occurring
Generation of waste from building retrofits	Social and environmental	Low (<5% of project value)	Low
Mitigation Measure(s)			
216. Recipients of financing for EE building retrofits will be required to dispose of the waste generated from civil works following the applicable regulations. Management of waste / construction debris will be part of the conditions in granting the funds and for awarding the civil works to the Contractor. According to the Laws of the Republic of Armenia on Waste Disposal and Sanitary Purification, on Local Self-Government, Self-Government in Yerevan City and the Law on Waste, the municipality is responsible for arranging the removal of waste but passes on this responsibility to the Contractor through the terms of the contract.			

** Please expand this sub-section when needed to address all potential material and relevant risks.*

H.1. Logic Framework.

Please specify the logic framework in accordance with the GCF's Results Management Framework and Performance Measurement Framework.

H.1.1. Paradigm Shift Objectives and Impacts at the Fund level[84]

Paradigm shift objectives	
Shift to low-emission sustainable development pathways	1. The project objective is to use an integrated suite of interventions to systematically de-carbonise the existing building stock to realise both energy savings and sustainable development benefits. 2. The project will create a favourable market environment and scalable business model for investment in energy efficiency retrofits, leading to sizeable energy savings and accompanying GHG emission reductions (directly, 1.4 million tCO_2 over the 20-year lifetime of the investments; including additional indirect savings, a total of between 4.2-4.4 tCO_{2eq}). It will also catalyse additional private and public sector financing of approximately US$ 100 million.

Expected Result	**Indicator**	**Means of Verification (MoV)**	**Baseline**	**Target**		**Assumptions**
				Mid-term (if applicable)	Final	
Fund-level impacts						
M3.0 Reduced emissions from buildings, cities, industries and appliances	GCF core indicator: Tonnes of carbon dioxide equivalent (t CO_2eq) reduced or avoided as a result of Fund-funded projects/programmes	EMIS system to be set up in Component 1 of the Project	0	100 kt CO_2e / year	Direct 1.4 Mt CO_2e over 20-years	Housing units and buildings are more resource- efficient and comfortable (and yet more affordable) at both

[84] Information on the Fund's expected results and indicators can be found in its Performance Measurement Frameworks available at the following link (Please note that some indicators are under refinement): http://www.gcfund.org/fileadmin/00_customer/documents/Operations/5.3_Initial_PMF.pdf

						high and low temperatures and thus subject to reduced long-term climate impacts
M3.0 Reduced emissions from buildings, cities, industries and appliances	GCF core indicator: Cost per t CO_2eq Defined as total investment cost / expected lifetime emission reductions	Project monitoring data on costs plus data from the indicator on tonnes of CO_2eq reduced	0	-	14.4 USD / tCO_2e for GCF	
M3.0 Reduced emissions from buildings, cities, industries and appliances	GCF core indicator: Volume of finance leveraged by the project and as a result of the Fund's financing, disaggregated by public and private sources	Project reporting	0	-	US$ 100 million	

H.1.2. Outcomes, Outputs, Activities and Inputs at Project/Programme level

Expected Result	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
Project/programme outcomes	**Outcomes that contribute to Fund-level impacts**					
M5.0 Strengthened institutional and regulatory systems	5.1 Institutional and regulatory systems that improve incentives for low-emission planning and development and their effective implementation (outcome indicator for Component 2)	Score on World Bank RISE indicators for buildings sector (see the UNDP Project Document for details – Annex II)	34	64	91	Strengthened institutional and regulatory systems lead to practical change and do not remain on paper
M7.0 Lower energy intensity of buildings, cities, industries and appliances	7.1 Energy intensity / improved efficiency of buildings, cities, industries and appliances as a result of Fund support	Reported data from project monitoring component	160 kWh / m^2	-	Reduc-ed by 50%	Rebound effect due to lower energy intensity is limited
UNDP IRRF 1.5: Inclusive and sustainable solutions adopted to achieve increased energy efficiency and universal modern energy access	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	Project plans, signed agreements, MoUs, financial reports and budgets. These may be available on partners' websites,	0	-	5	See Annex A of the Project Document (Annex II) for a discussion of UNDP's indicators.

		through media reports or direct communicat-ion with the partners involved				
Robust MRV for the building sector established *(Component 1 – Establishment of building sector MRV and knowledge management)*	Establishment of a web-based, publicly-accessible MRV database	Project reporting	No MRV in place	Website establish-ed and fully web-accessible	5,000 website hits per year	MRV systems continue producing data after project end
National, sub-national and local authorities adopt and implement an enabling policy framework for EE retrofits *(Component 2 – Policy de-risking)*	See indicator 5.1 above					
Access to affordable capital for EE retrofits provided *(Component 3 – Financial de-risking)*	Value of loans for building renovation provided	Reported data from project monitoring component	0	US$ 22m	US$ 100m	The Government continues to bring energy prices in line with market prices Level of skills among local professionals is maintained at a level that can support market growth Lenders make use of learning opportunities offered by the financial mechanisms supported in this project
Affordability of EE retrofits for most vulnerable households ensured through targeted financial incentives to building / apartment owners / ESCOs *(Component 4 – Financial incentives)*	Number of vulnerable beneficiaries (lowest quintile of household income) with improved building EE	Applications submitted for the financial incentives scheme	0	15,000	50,000	Targeted financial incentives are aligned with the capital provided for EE retrofits, effectively leading to the implementation of retrofits
Project/programme outputs	**Outputs that contribute to outcomes**					
1.1 MRV systems for the buildings sector in Armenia established	Development and coverage of MRV system and database	Regular project reporting	N/A	Developed & in use for renovated buildings: full coverage of buildings retrofitted	Develop ed & in use for renovat ed building s: full coverag es of	Building occupants cooperate with the implementation of MRV systems

				in this project	building s retrofitte d in this project	
1.2 Knowledge management and MRV information disseminated	Number of beneficiaries with access to knowledge about energy use in buildings, opportunities and financing for EE	Regular project reporting	N/A	Number of beneficiari es: 50,000	Number of benefici aries: 250,000	Learning opportunities offered by this project lead to sustained lending for EE investments
2.1 Public instruments for the promotion of investment in EE selected	UNDP's framework to support policy-makers in selecting public instruments to promote energy efficiency investment in developing countries used, adapted as necessary	Report on implementat-ion of the framework	Frame-work not used for EE in Armenia	Number of public instrument s selected: 3	Number of public instrum ents selected : 3	Policy-makers follow through on implementation of the selected instruments
2.2 Support provided to on-going legal reform in the field of EE	Binding legislation on building codes and adequate secondary legislation adopted.	National legislation	Level 3. Policies proposed and consultati on ongoing. [85]	Level 4. Strong policy adopted	Level 5. Strong policy adopted and institutio nal capacity strength ened	UNDP's working relationship with the Government is effectively employed to maintain the momentum for legal reform
2.3 Support provided for the creation of an enabling policy framework for EE retrofits in multi-owner residential buildings	Adequate secondary legislation providing a clear and effective set of functional models and a standard set of rules for multi-owner building management bodies to undertake EE retrofits developed, introduced and enforced	National legislation	Second-ary legislat-ion lacking	Level 6. Sub-sector plans reflect key policy targets	Level 7. Regulat ory frame-work develop ed	UNDP's working relationship with the Government is effectively employed to maintain the momentum for creation of an enabling policy framework
2.4 Support provided to building owners / managers / owner associations / ESCOs on legal matters related to EE retrofit projects	Business models for repayment of EE investments implemented	Regular project reporting	Level 1. No business models for repay-ment of EE invest-ments in buildings in place	Level 3. Strong proposal defined with buy-in from stakehold ers confirmed	Level 5. Financ-ial mechan -ism in operat-ion with eviden-ce of stability	Gradual introduction of performance-based contracts and risk transfer to ESCOs, combined with capacity building, lead to the development of an ESCO market
2.5 Exit strategy measures implemented	Additional exit strategy measures designed and implemented	Regular project reporting	N/A	Additional exit strategy measures designed	Addition al exit strategy measur es	Exit strategy succeeds in maintaining the momentum created by the project and

[85] The indicators for 2.2, 2.3 and 2.4 use GEF definitions (as defined in Annex II of the Climate Change Mitigation Focal Area Strategy in the GEF-6 Programming Directions) for the baseline and targets.

					implem-ented	leads to local stakeholders continuing to further develop the market
3.1 Technical assistance provided to banks and other financial institutions	Capacity of banks to develop and market products for energy efficiency retrofits in individual houses	Survey of bank employees	Banks do not have the capacity to develop and market products for energy efficiency retrofits in individual houses	2 Armenian banks have the capacity to develop and market products for energy efficiency retrofits in individual houses	4 Armen-ian banks have the capacity to develop and market product s for energy efficien-cy retrofits in individ-ual houses	Banks are interested and participate in capacity building to enable them to deliver EE projects in individual houses
3.2 Technical assistance for HOA market facilitation provided to banks	Capacity of banks to develop and market products for energy efficiency retrofits in multi-owner residential buildings	Survey of bank employees	Banks do not have the capacity to develop and market products for energy efficiency retrofits in multi-owner resident-ial buildings	2 Armenian banks have the capacity to develop and market products for energy efficiency retrofits in multi-owner residential buildings	4 Armen-ian banks have the capacity to develop and market product s for energy efficien-cy retrofits in multi-owner resident -ial building s	Banks are interested and participate in capacity building to enable them to deliver EE projects in multi-owner residential buildings
3.3 Technical assistance provided to local government to develop EE retrofit projects for publicly-owned buildings	Percentage of local government employees in Armenia who believe they have the capacity to develop EE retrofit projects for publicly-owned buildings	Survey of local government employees	Local govern-ment does not have the capacity to develop EE retrofit projects for	50% of local govern-ment employ-ees believe local govern-ment has the capacity to	80% of local govern-ment employ-ees believe local govern-ment has the capacity	Local government is interested and participates in capacity building to enable it to deliver EE projects in public buildings

			publicly-owned buildings	develop EE retrofit projects for publicly-owned buildings	to develop EE retrofit projects for publicly-owned buildings	
3.4 Access to affordable capital for EE retrofits provided	Amount and number of loans for building renovation provided	Reported data from project monitoring component	No lending provided	US$ 20 million	US$ 86.25 million	Economic situation continues to improve
3.5 Marketing platform created	Marketing materials developed and platform created	Marketing materials, project reporting	No market-ing materials exist	Marketing materials created and disseminat-ed to at least 5,000 stake-holders	Market-ing platform created and dissem-inated to at least 25,000 stake-holders	Marketing campaign successfully raises awareness of the opportunities offered by building EE retrofits
4.1 Targeted financial incentives provided to vulnerable groups to help address the affordability gap	Financial mechanism to provide targeted financial incentives in place and incentives provided	Reported data from project monitoring component	No incentive s in place	Incentives provided to 15,000 beneficiari es	Incentiv es provide d to 50,000 benefici aries	Sufficient uptake of the financial incentive among the target market of vulnerable home owners

Activities	Description	Inputs	Description
1.1.1 MRV framework	Development of the MRV framework, including guidelines and monitoring methodologies for the various categories of buildings	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to develop MRV framework in conjunction with the project team
1.1.2 EMIS implementation	Support to full implementation of building EMIS in targeted buildings for demonstration and capacity building purposes	Software International consultants, Local consultants, PMU staff time, Funds	Following competitive tender and based on detailed technical specifications, Ministry of Nature Protection financially supported for the purchase of EMIS systems
1.2.1 Stakeholder engagement	Identifying appropriate formats for reaching the relevant stakeholders	International consultants, Local consultants, PMU staff time, Funds	Specialist communications consultants engaged to develop communications strategy
1.2.2 Website	Establishment of a website that will provide information and a platform for communication between the different stakeholders	Web developer, Web hosting	Competitive tender for Web design and implementation
1.2.3 Formats for dissemination	Formats for information dissemination will be developed based on their likely effectiveness for raising awareness,	International consultants, Local consultants,	Specialist communications consultants assist with the development of informative and

	facilitating information access and providing actionable guidance and support to the sector	PMU staff time, Funds	accessible literature and other media communications tailored to specific user-groups
1.2.4 Information provision	Provision of information to consumers	Printing and publication costs, International consultants, Local consultants, PMU staff time, Funds	Procurement of design and print services, and development of accessible information products
2.1.1 Public instrument selection	The project will make use of UNDP's framework to support policy-makers in selecting public instruments to promote energy efficiency investment in developing countries	Workshops (2) and meetings (15), International consultants, Local consultants, PMU staff time, Funds	Specialist DREI consultants and UNDP staff to assist in instrument selection
2.2.1 Technical specialist support to authorities to adopt and implement an enabling policy framework	Support to national, sub-national and local authorities to adopt and implement an enabling policy framework for EE retrofits.	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to assist in preparation of policies and regulations defining the terms of EE retrofits
2.2.2 Introduction of legislation	Support to the gradual introduction of binding legislation on energy auditing, energy passports / certificates and labelling for existing buildings	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to assist in design and implementation of legislation, and the design and implementation of auditing, passports and labelling
2.2.3 Public building legislation	Support to the introduction of legislation specific to public buildings	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to assist in design and implementation of legislation
2.3.1 Technical support from experts to policy-makers in developing policy related to HOA legal status, payment enforcement and management	Support to policy-makers in developing policy relating to HOA legal status, payment enforcement, professional management and consensus levels	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to advise and develop evidence base for policy-makers for development of HOA policy
2.4.1 Legal support to management of multi-owner buildings related to energy efficiency retrofits	Provide support on legal matters related to EE retrofit projects for multi-owner buildings	International consultants, Local consultants, PMU staff time, Funds	Specialist legal support hired on a retainer basis and made available to retrofit projects as and when required
2.4.2 ESCOs	Provide support to establishing ESCOs	International consultants, Local consultants, PMU staff time, Funds	Specialist technical and legal consultants hired to assist with support to ESCO establishment
2.5.1 Exit strategy	Development and implementation of exit strategy	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to advise on design and implementation of post-project impact sustainability measures
3.1.1 Technical support provided to banks to develop and market energy efficiency products to individual residences	Provide support to banks to develop and market products for energy efficiency in individual residences	International consultants, Local consultants, PMU staff time, Funds	Technical and financial consultants hired to assist with support to local banks

3.2.1 Technical support provided to banks to develop and market energy efficiency products to multi-owner building management (HOAs)	Support to development of bank products for HOAs	International consultants, Local consultants, PMU staff time, Funds	Technical and financial consultants hired to assist with support to local banks
3.3.1 Publicly-owned buildings	Support to the process of identification, development and aggregation of technically and financially feasible EE retrofit projects in publicly-owned buildings	International consultants, Local consultants, PMU staff time, Funds	Specialist consultants hired to assist with development of screening criteria and aggregation methodologies for EE retrofit projects in public buildings
3.4.1 Technical structure for financial instruments	Establishment and maintenance of the technical structure for the financial de-risking instruments offered	Concessional loans: US$ 86.25 million	Mode of operation of the financial de-risking instruments designed, implemented and documented
3.4.2 Verification	Verification of funded investments	International consultants, Local consultants, PMU staff time, Funds	MRV system designed, implemented and documented
3.5.1 Marketing support	Provide marketing support to banks	Printing and publication costs, International consultants, Local consultants, PMU staff time, Funds	Specialist communications consultants assist with the development of literature and other media communications tailored to specific customer segments
4.1.1Targeted incentives	Targeted financial incentives provided to building / apartment owners, or the ESCOs serving these clients	Incentives: US$ 14 million	Mode of operation of the financial incentives designed, implemented and funds transferred

H.2. Arrangements for Monitoring, Reporting and Evaluation

217. Project-level monitoring and evaluation will be undertaken in compliance with the UNDP POPP and the UNDP Evaluation Policy. Concerning energy savings, Component 1 focuses on collection of data. Since it is not cost-effective to measure the savings in all retrofitted buildings, a selection of buildings (covering locations, building types, usage, retrofit measures) will receive Energy Management Information Systems, providing detailed performance information in real-time. This data will be used to determine overall project savings by including details of the measures and types of buildings retrofitted. Responsibility for reporting on savings rests with the Project Management Team, and will report to UNDP. UNDP will perform monitoring and reporting throughout the Reporting Period in accordance with the Accreditation Master Agreement (AMA). UNDP has the country presence and capacity to perform such functions. In the event of any additional post-implementation obligations over and above the AMA, UNDP will discuss and agree these with the GCF Secretariat in the final year of the Reporting Period and will prepare a post-Reporting Period plan and budget for approval by the GCF Board as necessary.

218. The primary responsibility for day-to-day project monitoring and implementation rests with the Project Manager. The Project Manager will develop annual work plans to ensure the efficient implementation of the project. The Project Manager will inform the Project Board and the UNDP Country Office of any delays or difficulties during implementation, including the implementation of the M&E plan, so that the appropriate support and corrective measures can be adopted. The Project Manager will also ensure that all project staff maintain a high level of transparency, responsibility and accountability in monitoring and reporting project results.

219. The UNDP Country Office will support the Project Manager as needed, including through annual supervision missions. The UNDP Country Office is responsible for complying with UNDP project-level M&E requirements as

outlined in the UNDP POPP. Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP Regional Technical Advisor as needed. The project target groups and stakeholders, including the NDA Focal Point, will be involved as much as possible in project-level M&E.

220. A project inception workshop will be held after the UNDP project document has been signed by all relevant parties to: a) re-orient project stakeholders on the project strategy and discuss any changes in the overall context that influence project implementation; b) discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms; c) review the results framework and discuss reporting, monitoring and evaluation roles and responsibilities and finalise the M&E plan; d) review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; e) plan and schedule Project Board meetings and finalise the first year annual work plan. The Project Manager will prepare the inception report no later than one month after the inception workshop. The final inception report will be cleared by the UNDP Country Office and the UNDP Regional Technical Advisor, and will be approved by the Project Board.

221. A project implementation report (PIR) will be prepared for each year of project implementation. The Project Manager, the UNDP Country Office and the UNDP Regional Technical Advisor will provide objective input into the annual PIR and the GCF reporting requirements as described in the Accreditation Master Agreement. The Project Manager will ensure that the indicators included in the project results framework are monitored annually well in advance of the PIR submission deadline and will objectively report progress in the Development Objective tab of the PIR. The annual PIR will be shared with the Project Board and other stakeholders. The UNDP Country Office will coordinate the input of the NDA Focal Point and other stakeholders to the PIR. The quality rating of the previous year's PIR will be used to inform the preparation of the next PIR. The final project PIR, along with the terminal evaluation report and corresponding management response, will serve as the final project report package.

222. An independent mid-term review process will be undertaken and the findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the final MTR report will follow the standard templates and guidance available on the UNDP Evaluation Resource Centre. The final MTR report will be cleared by the UNDP Country Office and the UNDP Regional Technical Advisor, and will be approved by the Project Board. The final MTR report will be available in English.

223. An independent terminal evaluation (TE) will take place no later than three months prior to operational closure of the project. The terms of reference, the review process and the final TE report will follow the standard templates and guidance available on the UNDP Evaluation Resource Centre. The final TE report will be cleared by the UNDP Country Office and the UNDP Regional Technical Advisor, and will be approved by the Project Board. The TE report will be available in English. The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan, and will upload the final terminal evaluation report in English and the management response to the public UNDP Evaluation Resource Centre (ERC) (www.erc.undp.org).

224. The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure in order to support ex-post evaluations.

225. A detailed M&E budget, monitoring plan and evaluation plan are included in the UNDP Project Document. See Chapter 6 of the Project Document (Annex II) for more details.

I. SUPPORTING DOCUMENTS FOR FUNDING PROPOSAL

- ☒ NDA No-objection Letter (Annex I)
- ☒ UNDP Project Document including Feasibility Study (Annex II)
- ☒ Integrated Financial Model that provides sensitivity analysis of critical elements (xls format) (Annex III)
- ☒ Confirmation letters for co-financing commitment (Annex IV)
- ☒ Term Sheet (Annex V)
- ☒ Environmental and Social Screening Report (Annex VI)
- ☒ Appraisal Report and Due Diligence Report with recommendations (Annex VII)
- ☒ Evaluation Report of the baseline project (Annex VIII)
- ☒ Map indicating the location of the project/programme (Annex IX)
- ☒ Timetable of project/programme implementation (Annex X)
- ☒ Project/programme confirmation (Annex XI)
- ☒ Economic analysis- theory of change (Annex XII)
- ☒ Additional background details (Annex XIII)
- ☒ Responses to GCF comments on concept note (Annex XIV)

Environmental and social report(s) disclosure

Basic project/programme information	
Project/programme title	De-risking and scaling-up investment in energy efficient building retrofits (in Armenia)
Accredited entity	United Nations Development Programme (UNDP)
Environmental and social safeguards (ESS) category	Category C
	Note: *Environmental and social report disclosure not required for Category C and Intermediation 3 projects and programmes.*
Environmental and social report disclosure information	
Description of report/disclosure	N/A
Date of disclosure on accredited entity's website	
Language(s) of disclosure	N/A
Link to disclosure	http://
Other link(s)	http://

Annex 2. Social and Environmental Screening

Social and Environmental Screening Template – GCF energy Armenia project

Project Information

Project Information	
1. Project Title	De-risking and Scaling-up Investment in Energy Efficient Building Retrofits
2. Project Number (i.e. Atlas project ID, PIMS+)	5684
3. Location (Global/Region/Country)	Armenia
4. Project stage (Implementation)	The project has been making a steady progress toward the fulfilment of its targets as articulated in the original Funding Proposal and the Refocus Analysis approved by the GCF in November 2020. The overall objective of the project remains as stated in the Funding Proposal: to scale up investment in EE building retrofits in the cities of Armenia and reduce the overall investment risk profile of EE building retrofits to encourage private sector investment and alleviate poverty. The project pursues this objective primarily by deploying GCF funds in finance mechanisms while also delivering technical assistance in policy development, promotion, monitoring and verification, and design and installation of EE measures. As of December 2022, the project has implemented energy-efficiency (EE) retrofits in 44 public buildings and 98 residential buildings, leading to emissions reductions of 13,675 tCO2 per year or around 273,503 tCO2 over the 20-year lifetime of the interventions. This corresponds to around 20 percent of the target set for this impact indicator. The total number of beneficiaries stands at 29,844, including 20,773 in public buildings (44) and 9,071 in residential buildings (98), which corresponds to 60% of the final target (50,000 beneficiaries) set for this impact indicator. The Restructuring Proposal (1 March 2023) requests a 36-month extension and: 1. Confirms changes introduced in 2020 (in refocus analysis) to the number of building EE renovation projects in various building types with a shift toward increasing the share of public buildings and opening the project scope towards the residential multi-apartment buildings (MABs) outside Yerevan. 2. Adds new responsible parties - in addition to the Municipality of Yerevan as per the Funded Activity Agreement, to execute/receive parts of the GCF grant for EE retrofit activities. 3. Adds new co-financing sources/partners for the execution of the subsidy component of the project (see the restructuring proposal for details).
5. Date	7 March 2023

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

QUESTION 1: How Does the Project Integrate the Programming Principles in Order to Strengthen Social and Environmental Sustainability?
Briefly describe in the space below how the project mainstreams the human rights-based approach
The restructuring proposal enhances the availability and accessibility of energy efficiency retrofits (involving thermal insulation of external walls, roofs/attic floors, and basement ceilings, replacement of doors and windows of the buildings, installation of LED lighting systems inside and outside of buildings, replacement of old heating systems with new units, and installation of renewable energy sources (PV and SWH) in 6 schools, 1 youth center, 2 large healthcare facilities in Yerevan, and residential multiapartment buildings in Yerevan and public buildings in 16 local communities throughout the country (Ashtarak, Vedi, Argel, Stepanavan, Spitak, Tashir, Kajaran, Sisian, Gyumri, Dilijan, Berd, Hrazdan, Gavar, Akhtala, Alaverdi, Ijevan).

The project continues to fulfill the Needs of the Recipient investment criterion as envisioned in the Funding Proposal, as EE retrofits alleviate energy poverty among vulnerable citizens while also reducing state and communities' budget spending on energy for public buildings.

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

The project involves gender-sensitive implementations approach that:

- Ensures that outreach, information campaign, and development of communication and dissemination strategy includes women: About 40 % of participants in meetings with MABs owners/condominiums/resident is women.
- Requires contractors or ESCOs to employ local labor including women, as appropriate. In 2019, according to the reports of 21 companies contacted for conducting EE retrofit activities, in total, 130 persons were employed through jobs created from the Project, of which 56 or 43.1% were women. Compared to 2018, the share of women in the total number of employed increased from 20% to 43.1%. In addition, six Media-companies, contracted by the Project in 2019, reported on 34 employed persons in total, of which 20 or 58.8% are women.
- Promotes active women participation in developing new energy efficiency building codes and standards, and in developing EE projects: 15 % of participants in meetings at Yerevan municipality on EE retrofits in MABs were women.
- Promotes active women participation in developing new energy efficiency building codes and standards, and in developing EE projects: Share of women participants, attended in capacity building events on MRV and EMIS is around 30%.

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

The project reduces vulnerabilities and strengthens resilience of communities to raising energy costs (both for heating and especially air conditioning) due to climate change. The air conditioning costs will likely steadily increase since the already frequent heatwaves in Armenia are projected to increase by 18% under RCP8.5 by the end of the century.

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

The project is closely consulted with the National Designated Authority (the Ministry of Environment of the Republic of Armenia). It also has, with UNDP's active facilitation, very close, strong, mutually supportive relations with the Government of Armenia, including the Office of the Prime Minister, the Ministry of Finance, the Ministry of Territorial Administration (which runs the State Subvention Programme) and numerous line ministries. Collaboration with the Municipality of Yerevan remains strong and positive. Project staff and UNDP Country Office senior management regularly engage with all of these parties via very frequent email correspondence, one-on-one meetings, and meetings of the Project Board. All updates to planned project activities have been discussed with the stakeholders and providers of co-financing.

A project-level GRM has been established and, so far, there are no known objections from the stakeholders to any of the activities proposed in the restructuring proposal.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Complete SESP Attachment 1 before responding to Question 2.*	**QUESTION 3: What is the level of significance of the potential social and environmental risks?** *Note: Respond to Questions 4 and 5below before proceeding to Question 5*	**QUESTION 6: Describe the assessment and management measures for each risk rated Moderate, Substantial or High**

Risk Description (broken down by event, cause, impact)	*Impact and Likelihood (1-5)*	*Significance (Low, Moderate Substantial, High)*	*Comments (optional)*	*Description of assessment and management measures for risks rated as Moderate, Substantial or High*
Risk 1: **Building retrofits may potentially raise grievances or objections from stakeholders concerned, especially if they are to disrupt the operations of the public entities (residing in those buildings)** Accountability Principle (P.14)	I = 3 L = 1	Low	Stakeholders that may be potentially affected by the proposed retrofits may have grievances or objections that need to be duly considered either through engagement processes or - should stakeholders' objections remain - relevant redress mechanisms.	The responsible parties shall confirm that the owners and tenants of the respective buildings agree with the proposed retrofit and there are no objections to it within the wider community from the residents or the beneficiaries (in case of public buildings). They must also inform the relevant stakeholders about an opportunity to file potential complaints or disputes through UNDP's Grievance Redress Mechanism (GRM). This will be managed through responsible party agreements/letter of agreements which would accommodate this requirement. UNDP will be requested to be informed in case of any grievance is submitted to any of the co-financing partners/responsible parties.
Risk 2: **Building retrofits may cause structural failures in the respective buildings.** Standard 3: Community Health, Safety and Security (3.1)	I = 3 L = 1	Low	EE retrofits do not trigger structural instability, and do reduce loads, particularly dead loads in roofs/attic, hence improving the structural durability. Retrofit projects may however not be properly designed and workers performing them may not have the right experience and training.	The responsible parties shall confirm that: • Energy efficiency retrofits comply with applicable national construction norms/building codes and standards as well as international best practices. The same applies for electric systems (installation of photovoltaic systems, solar heating systems, and the installation of LED lighting systems inside and outside of buildings). • Works will be implemented and maintained by the legally registered contractor(s) having relevant permits for the relevant works. Proof of experience and track record will be required from the contractor(s) prior to award of the retrofit work. • Contractor(s) will be required to conduct orientation and training for workers on EE building retrofits, particularly multi-family apartment buildings and public buildings. This will be managed through responsible party agreements/letter of agreements which would accommodate this requirement prior to disbursement of the GCF subsidy.
Risk 3: **Retrofits may require handling of asbestos that poses health risks for the construction workers and tenants.**	I = 3 L = 3	Moderate	Prior to the dissolution of the USSR, asbestos was widely used in Armenia in building materials and products (slate, partition plates, pipes, ventilation, electric heaters,	The buildings proposed for energy efficiency retrofit must be surveyed for asbestos by a competent specialist with training in asbestos surveying, in accordance with national law. If asbestos is present in elements or building shell components

Standard 3: Community Health, Safety and Security (3.1) Standard 7: Labour and Working Conditions (7.1 and 7.6) Standard 8: Pollution Prevention and Resource Efficiency (8.2)			etc.). Roofing slates used in rural areas mostly contain asbestos. With the introduction of new roofing materials such as roof tile, laminated/painted steel sheets, the use of asbestos as a building material dropped dramatically. However, despite the decline of the new use of asbestos in construction, the existing asbestos materials and waste remain a problem and it cannot be excluded that some of the project targeted buildings will contain it.	where retrofitting actions and measures are planned, the respective energy efficiency retrofit must involve provisions for the safe handling of asbestos by appropriately trained personnel in accordance with the national law and UNDP SES requirements. The project should follow the UNDP/UNEP International Best Practice guidelines for the Safe Handling of Asbestos. This will be managed through responsible party agreements/letter of agreements which would accommodate this requirement prior to disbursement of the GCF subsidy.
Risk 4: **Waste from building retrofits may not be properly handled.** Standard 8: Pollution Prevention and Resource Efficiency (8.2)	I = 3 L = 1	Low	Tearing down insulation and replacing pipes, doors, and windows as part of retrofit works will generate waste.	The responsible parties shall confirm that the management of waste/construction debris will be part of the conditions in granting the funds and for awarding the civil works to the contractor. These will require EE building retrofits to use the best available techniques for the removal and safe handling of any hazardous substances during construction and dispose demolition waste and the waste generated from civil works in accordance with the applicable regulations. According to the Laws of the Republic of Armenia on Waste Disposal and Sanitary Purification, on Local Self-Government, Self-Government in Yerevan City and Law on Waste, arrangement of waste disposal is the part of the community's mandatory responsibilities. This will be managed through responsible party agreements/letter of agreements which would accommodate this requirement prior to disbursement of the GCF subsidy.
Risk 5: **Building retrofits may generate air emissions.** Standard 3: Community Health, Safety and Security (3.2)	I = 4 L = 2	Moderate	Replacement of old heating system with new units might possibly lead -in case of heating capacity expansion or fuel changes – to elevated air emissions. However, this is not the case within this particular project, because Armenia reached over 95% gasification level. Coal or fuel oil fired boilers are not used for	The responsible parties shall confirm that the installation of the new heating units/boilers meets the applicable national/local requirements for air quality management and that the replacement of heating systems does not significantly increase the emissions of pollutants into air as compared with the old heating system. They should also confirm that the EE projects will take steps to minimize or mitigate any negative effects to minimize the potential for increased air emissions during building retrofits, it is important to carefully evaluate the environmental impacts of

			heating needs. The project will only replace old gas-fired boilers with higher efficiency condensing type gas-fired boiler systems. Nevertheless, the construction works during retrofits may increase air pollution levels through exhaust gases emitted by machines and dust caused by the stonework.	all proposed activities and to. This may involve selecting materials, equipment and technologies with higher efficiency, implementing effective dust control measures during construction, and ensuring proper ventilation during the retrofit. This will be managed through the responsible party/letter of agreement.
Risk 6: **Retrofits may be implemented using unregulated working hours and inadequate labor conditions.** Standard 7: Labour and Working Conditions (7.1)	I = 3 L = 3	Moderate	Project is estimated to generate rather significant amount of jobs, about 1,700, and at the same time the country's regulatory framework and/or practice is known for major gaps in protecting ILO core labour standards, related to occupational health and safety (OHS), labour inspections and discrimination and harassment.	The responsible parties shall confirm that retrofits will be managed in accordance with the National Labor Code and according to the international ILO requirements and good practice. Project responsible party will have to ensure that procedures to ensure observance of workers' rights, occupational health and safety, and procedures to prevent discrimination are in place and adequately managed during retrofitting works. Before any contract for retrofitting work is signed, the contractor formally agrees to comply with the requirements to observe workers' rights, ensure workers' health and safety and to prevent discrimination. Concrete requirements will be listed in the ESMF.
	QUESTION 4: What is the overall project risk categorization?			
		Low Risk	☐	
		Moderate Risk	X	Because of: Risk 3 and 5: Retrofits may require handling of asbestos that poses health risks for the construction workers and tenants.Further, the installed heating systems might increase emission pollutants. Risk 6: Retrofits may be implemented using unregulated working hours and inadequate labor conditions.
		Substantial Risk	☐	
		High Risk	☐	
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are triggered? (check all that apply)			

	Question only required for Moderate, Substantial and High Risk projects				
	Is assessment required? (check if "yes")	☐			***Status? (completed, planned)***
	if yes, indicate overall type and status		X	Targeted assessment(s)	The buildings proposed for energy efficiency retrofit must be surveyed for asbestos by a competent specialist with training in asbestos surveying in accordance with national law.
			☐	ESIA (Environmental and Social Impact Assessment)	
			☐	SESA (Strategic Environmental and Social Assessment)	
	Are management plans required? (check if "yes)	☐			
	If yes, indicate overall type		X	Targeted management plans (e.g. Gender Action Plan, Emergency Response Plan, Waste Management Plan, others)	Gudelines for asbestos waste handling
			☐	ESMP (Environmental and Social Management Plan which may include range of targeted plans)	
			x	ESMF (Environmental and Social Management Framework)	ESMF will be prepared and outline the risk management strategies with respect to retrofits of all types of buildings, considering different responsible party involvement.
	Based on identified risks, which Principles/Project-level Standards triggered?		**Comments (not required)**		
	Overarching Principle: Leave No One Behind				
	Human Rights	☐			
	Gender Equality and Women's Empowerment	☐			
	Accountability	☐			

	1. Biodiversity Conservation and Sustainable Natural Resource Management	☐	
	2. Climate Change and Disaster Risks	☐	
	3. Community Health, Safety and Security	X	
	4. Cultural Heritage	☐	
	5. Displacement and Resettlement	☐	
	6. Indigenous Peoples	☐	
	7. Labour and Working Conditions	X	
	8. Pollution Prevention and Resource Efficiency	X	

Final Sign Off

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

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

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks		
INSTRUCTIONS: The risk screening checklist will assist in answering Questions 2-6 of the Screening Template. Answers to the checklist questions help to (1) identify potential risks, (2) determine the overall risk categorization of the project, and (3) determine required level of assessment and management measures. Refer to the SES toolkit for further guidance on addressing screening questions.		
Overarching Principle: Leave No One Behind **Human Rights**		**Answer (Yes/No)**
P.1	Have local communities or individuals raised human rights concerns regarding the project (e.g. during the stakeholder engagement process, grievance processes, public statements)?	No
P.2	Is there a risk that duty-bearers (e.g. government agencies) do not have the capacity to meet their obligations in the project?	No
P.3	Is there a risk that rights-holders (e.g. project-affected persons) do not have the capacity to claim their rights?	No
Would the project potentially involve or lead to:		
P.4	adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
P.5	inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups, including persons with disabilities? [16]	No
P.6	restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalized individuals or groups, including persons with disabilities?	No
P.7	exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Gender Equality and Women's Empowerment		
P.8	Have women's groups/leaders raised gender equality concerns regarding the project, (e.g. during the stakeholder engagement process, grievance processes, public statements)?	No
Would the project potentially involve or lead to:		
P.9	adverse impacts on gender equality and/or the situation of women and girls?	No
P.10	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
P.11	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? *For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being*	No
P.12	exacerbation of risks of gender-based violence? *For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc*.	No

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

Sustainability and Resilience: Screening questions regarding risks associated with sustainability and resilience are encompassed by the Standard-specific questions below		
Accountability		
Would the project potentially involve or lead to:		
P.13	exclusion of any potentially affected stakeholders, in particular marginalized groups and excluded individuals (including persons with disabilities), from fully participating in decisions that may affect them?	No
P.14	grievances or objections from potentially affected stakeholders?	YES
P.15	risks of retaliation or reprisals against stakeholders who express concerns or grievances, or who seek to participate in or to obtain information on the project?	No
Project-Level Standards		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
Would the project potentially involve or lead to:		
1.1	adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? *For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes*	No
1.2	activities within or adjacent to critical habitats and/or environmentally sensitive areas, including (but not limited to) legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3	changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4	risks to endangered species (e.g. reduction, encroachment on habitat)?	No
1.5	exacerbation of illegal wildlife trade?	No
1.6	introduction of invasive alien species?	No
1.7	adverse impacts on soils?	No
1.8	harvesting of natural forests, plantation development, or reforestation?	No
1.9	significant agricultural production?	No
1.10	animal husbandry or harvesting of fish populations or other aquatic species?	No
1.11	significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	No
1.12	handling or utilization of genetically modified organisms/living modified organisms?[17]	No
1.13	utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)[18]	No
1.14	adverse transboundary or global environmental concerns?	No
Standard 2: Climate Change and Disaster Risks		
Would the project potentially involve or lead to:		

[17] See the Convention on Biological Diversity and its Cartagena Protocol on Biosafety.

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

2.1	areas subject to hazards such as earthquakes, floods, landslides, severewinds, storm surges, tsunami or volcanic eruptions?	No
2.2	outputs and outcomes sensitive or vulnerable to potential impacts of climate change or disasters? *For example, through increased precipitation, drought, temperature, salinity, extreme events, earthquakes*	No
2.3	increases in vulnerability to climate change impacts or disaster risks now or in the future (also known as maladaptive or negative coping practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	No
2.4	increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?	No
Standard 3: Community Health, Safety and Security		
Would the project potentially involve or lead to:		
3.1	construction and/or infrastructure development (e.g. roads, buildings, dams)?	Yes
3.2	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	Yes
3.3	harm or losses due to failure of structural elements of the project (e.g. collapse of buildings or infrastructure)?	No
3.4	risks of water-borne or other vector-borne diseases (e.g. temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	No
3.5	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.6	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g. food, surface water purification, natural buffers from flooding)?	No
3.7	influx of project workers to project areas?	No
3.8	engagement of security personnel to protect facilities and property or to support project activities?	No
Standard 4: Cultural Heritage		
Would the project potentially involve or lead to:		
4.1	activities adjacent to or within a Cultural Heritage site?	No
4.2	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	No
4.3	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.4	alterations to landscapes and natural features with cultural significance?	No
4.5	utilization of tangible and/or intangible forms (e.g. practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
Would the project potentially involve or lead to:		
5.1	temporary or permanent and full or partial physical displacement (including people without legally recognizable claims to land)?	No

5.2	economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	risk of forced evictions?[19]	No
5.4	impacts on or changes to land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
Would the project potentially involve or lead to:		
6.1	areas where indigenous peoples are present (including project area of influence)?	No
6.2	activities located on lands and territories claimed by indigenous peoples?	No
6.3	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? *If the answer to screening question 6.3 is "yes", then Standard 6 requirements apply, and the potential significance of risks related to impacts on indigenous peoples must be Moderate or above.* *	No
6.4	the absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources? *Consider, and where appropriate ensure, consistency with the answers under Standard 5 above*	No
6.7	adverse impacts on the development priorities of indigenous peoples as defined by them?	No
6.8	risks to the physical and cultural survival of indigenous peoples?	No
6.9	impacts on the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices? *Consider, and where appropriate ensure, consistency with the answers under Standard 4 above.*	No
Standard 7: Labour and Working Conditions		
Would the project potentially involve or lead to: (note: applies to project and contractor workers)		
7.1	working conditions that do not meet national labour laws and international commitments?	Yes
7.2	working conditions that may deny freedom of association and collective bargaining?	No
7.3	use of child labour?	No
7.4	use of forced labour?	No
7.5	discriminatory working conditions and/or lack of equal opportunity?	No
7.6	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	Yes

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

* Note: revised July 2022 modifying presumption of risk significance from Substantial or higher to Moderate or higher.

Standard 8: Pollution Prevention and Resource Efficiency		
Would the project potentially involve or lead to:		
8.1	the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
8.2	the generation of waste (both hazardous and non-hazardous)?	Yes
8.3	the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?	
8.4	the use of chemicals or materials subject to international bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Montreal Protocol, Minamata Convention, Basel Convention, Rotterdam Convention, Stockholm Convention*	No
8.5	the application of pesticides that may have a negative effect on the environment or human health?	No
8.6	significant consumption of raw materials, energy, and/or water?	No

Annex 3. Restructuring Proposal

GREEN CLIMATE FUND

Restructuring Proposal

UNDP – Armenia - De-risking and Scaling-up Investment in Energy Efficient Building Retrofits in Armenia

7 June 2023

GREEN CLIMATE FUND

Contents

GREEN CLIMATE FUND

Note to accredited entities on the use of the Restructuring Proposal template
• Sections **A, B, C, D** and **E** of the Restructuring Proposal require detailed inputs from the accredited entity. • The total number of pages for the Restructuring Proposal (excluding annexes) is expected not to exceed 50.

Please submit the completed form to:

OPM@gcfund.org

Please use the following name convention for the file name:
"[FP]-[Agency Short Name]-[Date]-[Serial Number]"

A.1. PROJECT/PROGRAMME MILESTONES			
Date of Board Approval	30/06/2016		
Date of FAA Signature	07/06/2017		
Date of FAA Effectiveness	30/06/2017		
Closing Date	30/06/2022	Proposed Revised Closing Date	30/06/2025
Project Completion date	30/06/2023	Proposed Revised completion date	30/06/2026
Number of Disbursements to date	3		
Total disbursed Amounts (by instrument- loans, grants, equity)	Loans – n/a Grants – 5,933,000 USD (as of February 2023) Equity – n/a		
Undisbursed amounts (by instrument- loans, grants, equity)	Loans – n/a Grants – 14,067,000 USD (as of February 2023) Equity – n/a		
Cancelled amounts (broken down by instrument - loans, grants, equity)	Loans – n/a Grants – 0 Equity – n/a	Cancellation date	N/A

A.2. SUMMARY OF PROPOSED CHANGES TO THE PROJECT/PROGRAMME (max 300 words)

Through this restructuring proposal the accredited entity is requesting to accommodate the following changes:

(1) A 36-month extension of the original Completion Date and Closing Date (30 June 2022 to 30 June 2025; and 30 June 2023 to 30 June 2026 respectively to be reflected in the Funded Activity Agreement (FAA));

The project is seeking this extension because of the delays triggered by the COVID-19 pandemic and the escalation of military hostilities between Armenia and Azerbaijan since September 2020. Both factors forced the temporary realignment of the political and budget priorities of national and regional government entities during more than 2 years, while also creating challenges for the companies providing building renovation services. The Government of Armenia now considers this project extension to be of the highest priority, given the remaining needs for energy efficient building retrofits across the country and confirmed its full commitment to the project. The project has developed a comprehensive plan for expedited implementation for the extended period. This plan involves materialization of new sources of co-financing for pre-identified building renovation projects, to which the project will contribute by providing technical assistance and incremental GCF-funded support for energy efficiency (EE) renovation investments. The 36-month extension request is based on the workplan of UNDP and its partners to carry out the retrofitting work. This extension request was originally submitted to GCF on 20 October 2022.

(2) Revision of the retrofitted building targets (updated logic framework, update to section C.2. of the Funding Proposal (FP))

While the overall strategy, objective, and targeted reduction of GHG emissions is projected to remain unchanged following the original GHG calculation methodology (from 2017 as approved by GCF for the funding proposal). In case

the targeted reduction of GHG emissions is recalculated based on updated emission factor, the decrease in impact will be not more than 5%[1].

The project has revised some of its output-level plans. These revisions include firstly changes to the number of building EE renovation projects in various building types. Such revision was first carried out for the Refocus Analysis (submitted to GCF in 2020), with a shift toward increasing the share of public buildings (in line with the recommendations from the GCF independent Technical Advisory Panel) and involving residential multi-apartment buildings (MABs) outside Yerevan. Please see section F.1 for the proposed changes with respect to building targets, replacing the *expected impact* targets in section C.2 of the approved funding proposal.

(3) **Decrease of the co-financing from the European Investment Bank (EIB): co-financing to be reduced from USD 100 million to USD 14.8 million (in the logframe; revision to FAA schedule 2A, updated co-financing section B.2 in FP.); and accommodation of new co-finance sources (Schedule 2 of the FAA)**

These changes were triggered by the partial non-materialization of the EIB loan for energy efficient retrofits originally foreseen to materialize during the project implementation period. UNDP proactively sought other co-financing arrangements/partnerships to fill in the financial gap and reach project impact targets to the extent possible. (The new co-finance sources have been identified to fill in the financing gap which occurred in early stages of the project implementation due to EIB loan not being signed for the amount originally foreseen at the project design. The GCF Secretariat was informed about most of these new sources of co-finance in the Refocus Analysis in 2020, while some additional partnerships were agreed more recently, while discussing the need for accelerated delivery of the project for the extended 3-year period. For details, please refer to section B.2 for the new proposed overall financing structure, including past and future financial projections, B.4, B.5 and the annex 5 which provides a comprehensive list of agreements in place or to be entered to during the 3-year extension period. All newly identified co-financiers underwent UNDP Partner Capacity Assessment (PCAT). Following UNDP rule, micro-assessments (Harmonized Approach to Cash Transfers) were also conducted for the relevant co-financiers. Signature of the relevant responsible party/letter of agreements is a condition for UNDP to disburse the GCF grant to such Responsible Parties for energy efficient retrofits in line with the implementation timelines, in line with UNDP rules.

UNDP disbursements would be guided by the following conditions – UNDP will submit to GCF Secretariat the following:

- For disbursement 5: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 8 mln[2] for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 5 will be applied.
- For disbursement 6: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 12.3 mln[3] for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 6 will be applied.
- For disbursement 7: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 5.7 mln[4] for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 7 will be applied.

[1] Original target as per FP is 1,388,332 tCO2/ 20 years, which was calculated using the GHG emission factor of 0.436 (as approved by GCF in 2017 in the Funding Proposal). As per GCF request, this target figure was recalculated using the GHG emission factor of 0.390 and is now equal to 1,176,690 tCO2/ 20 years. The emission reductions assessed based on ex-ante and the ex-post data are equal to 1,118,289 tCO2/ 20 years, and the difference between the target and the GHG ER makes not more than 5%.

2 70 per cent of co-finance required to flow for component 4 alongside GCF grant under that specific tranche.

3 ibid

4 ibid

Note: as per UNDP rules and procedures[5], UNDP will be signing letters of agreements/responsible party agreements only upon transfer of GCF grant to UNDP account.

(4) Addition of new responsible parties (revision to implementation arrangement as described in the FP and the FAA).

In addition to the Municipality of Yerevan, new responsible parties are proposed to be added to co-execute/receive parts of the GCF grant for EE retrofit activities. For more details, please see section C.2. The proposed new responsible parties are:

This constitutes a positive change as the project expanded its partnerships in the context of the implementation of the project, under the umbrella and execution leadership of the Ministry of Nature Protection (the executing entity). There is no change with respect to the role or capacities of the executing entity, and neither any adverse effect of addition of these new partners under the project umbrella.

(5) Updated disbursement schedule to account for reduction of the 4th disbursement and change in implementation times (revision to FAA schedule 2B).

For the extended period, in line with the revised implementation plan, a revision of the estimates for the disbursement requests is proposed. See section B.4 for the new estimates and updated disbursement schedule.

(6) Amendment of the condition 9.02 (e) of the FAA: submission of the exit strategy, to be submitted to GCF not 60 months but 84 months after the FAA effectiveness in view of the proposed extension.

In the light of requesting 36 months project extension, the finalization of the exit strategy is proposed to take place 12 months prior to the project completion This follows the same logic as the approved funding proposal, which proposed to submit a final exit strategy one year before the completion date (and not at the project design stage). This will allow for the exit strategy to reflect all the latest/achieved progress during the proposed extended period.

(7) Change in the ESS classification from C (no/low risk) to B (medium risk) as per the GCF safeguards policy

In view of the new co-financiers and partners for the 3-year extended period and following the most recent re-screening of the project, the project is proposed to be recategorized from C (no/low risk) to B (medium risk) as per the GCF safeguards standards. (This corresponds to the category of moderate risk as per the UNDP safeguards policy, and medium risk as per the GCF safeguards policy, as confirmed during the re-accreditation of UNDP). Please refer to annex 2 for the most recent safeguards screening, which identified moderate risks related to asbestos and air pollution stemming from the energy efficient retrofits in project Output 4.1. The Environmental and Social Management Framework and Plan (ESMF/P) is presented in annex 3[6]. The ESMF/P has been translated into local language and disclosed on UNDP and other websites/in an accessible location

[5] As per Financial Regulations 20.01, 20.03(b), Commitments must be made based on available financial allocations. Allocations for programmatic activities are based on contributions paid in advance of the allocation (Regulation 5.07(b), see also Financial Rule 107.02)

[6] GCF comments were received by UNDP on ESMF on 16 May – the expected resubmission of ESMF for GCF review and redisclosure on website is 23 May 2023.

as per the UNDP disclosure guidance and the GCF information disclosure policy in English and an official local language.] Please see also section F.3 and annex 4.

A.3. Is there any deviation from the AMA required for this project? Yes ☐ No ☒ If yes, please elaborate and justify why	
Change in Implementing/Executing Agency	*Yes [ ] No [x]*
Change in Project's Objectives	*Yes [ ] No [x]*
Change in Results Framework	*Yes [x] No [ ]*
Change in Expected Impact	*Yes [x] No [ ]*
Change in Legal Terms, Conditions and Covenants	*Yes [x] No []*
Change in Closing Date(s)	*Yes [x] No [ ]*
Change in Completion Date	*Yes [x] No [ ]*
Change in Technical/Project Design	*Yes [ ] No [x]*
Change in Scope	*Yes [ ] No [x]*
Any Cancellations Proposed	*Yes [ ] No [x]*
Change to Financing Plan	*Yes [x] No [ ]*
Changes to GCF Financing Amount	*Yes [ ] No [x]*
Change in Disbursement Arrangements	*Yes [x] No [ ]*
Reallocation between Disbursement Categories	*Yes [ ] No [x]*
Change in Disbursement Estimates	*Yes [x] No [ ]*
Change to Components and Cost	*Yes [ ] No [x]*
Change in Institutional Arrangements	*Yes [x] No [ ]*
Change in Financial Management	*Yes [ ] No [x]*
Change in Procurement	*Yes [ ] No [x]*
Change in Implementation Schedule	*Yes [x] No [ ]*
Change of ESS category	*Yes [x] No [ ]*
Other Changes to Safeguards	*Yes [ ] No [x]*
Change in Economic and Financial Analysis	*Yes [ ] No [x]*
Change in Technical Analysis	*Yes [ ] No [x]*
Change in Environmental and Social Analysis	*Yes [x] No []*
Change in Risk Analysis	*Yes [x] No [ ]*
Other Change(s)	*Yes [ ] No [x]*

B.1. ANY CHANGES TO STRATEGIC CONTEXT, FINANCIAL MARKET AND/OR PROJECT BASELINE SINCE APPROVAL THAT HAVE INFLUENCED THE CHANGE? YES ☒ NO ☐ IF YES, PLEASE ELABORATE

The Refocus Analysis prepared and submitted to the GCF in November 2020 takes note of the following changes in context.

- In spring 2018, there was a "velvet revolution" leading to a change in the Government of Armenia. The new Government, wary of expanding its external debt burdens, decided not to accept a $86M sovereign loan from the European Investment Bank (EIB), which was originally foreseen as a major source of co-financing of EE retrofits supported by this project (and listed in the Funded Activity Agreement).
- In the absence of this loan, the Government of Armenia agreed (after facilitation effort by UNDP and the project) to mobilize and apply new co-financing for EE building retrofits from the budget under the State Subvention Programme, which supports infrastructure investment outside of Yerevan.
- In addition, UNDP identified other co-financing sources/partners, including other EIB loans (sub-sovereign) and contributions from municipalities and local administrations.

Since the preparation of the Refocus Analysis, the following additional changes to the strategic context of the project have emerged.

- The COVID and escalation of military conflict between Armenia and Azerbaijan has shifted the priorities of Government and local administration from investment in energy efficient buildings retrofits towards other sectors. Linked to the COVID outbreak, the priorities were shifted towards construction of new healthcare facilities, enlarging/updating existing ones to be able to accommodate the large number of patients with COVID. Right after the ceasefire - construction of new safe roads, shelters for spontaneous arrivals as well as overall safety related works were prioritized over the general projects, including those on energy efficiency.
- Since the end of 2021, the Government of Armenia and its various line ministries, as well as the Municipality of Yerevan, started re-prioritizing renovation of public buildings. There is therefore a strong, diverse potential pipeline of renovation projects to which the project sees an opportunity to apply GCF support for cost-effective incremental EE upgrades.

Please see Section B.3. for an elaboration of how the project proposes to adjust its activities in response to these changes.

The Operations Manual(s) were developed (as set forth by the FAA) for 4 types of buildings to ensure establishing rules and regulations for the processes and procedures for the implementation of the activities under the project. Despite external factors such as political changes, conflict escalation and COVID - the types of buildings as well as eligible energy efficiency measures remain the same. All 4 Operations Manuals, which were approved by GCF in autumn 2020, remain applicable.

B.2. CHANGES TO PROJECT / PROGRAMME OBJECTIVE AGAINST BASELINE? YES ☐ NO ☒ IF YES, PLEASE ELABORATE

N/A

B.3. CHANGES TO PROJECT/PROGRAMME DESCRIPTION YES ☐ NO ☒ IF YES, PLEASE ELABORATE

There is no change to the project activity description (C.3 of the funding proposal), as approved by GCF. The nature of all project activities has not changed, and neither the description of the individual activities. The only changes are relevant to the co-financing arrangements and targets (which are described in subsequent sections.) Please refer to section H.1 for the updated logic framework.

B.4. CHANGES TO FINANCIAL ELEMENTS OF THE PROJECT/PROGRAMME

As of December 2022, the project has executed around US $4.541 million of the investment portion of its GCF budget in support of building energy retrofits. Since the FAA Schedule 2 was not revised following the refocus analysis in 2020, in the context of the co-financiers listed there, the materialized co-finance as of December 2022 amounts to 28.64 million USD, while the co-finance materialization outside of the FAA is 55.5 million USD so far (not captured formally as it is not reflected in Schedule 2).

There is no change with respect to the allocation of GCF proceeds under different outputs of the project. With respect to co-finance, as per Schedule 2 of the FAA (please see annex 5), the following has changed since the project start (see also section B.5):

- Increased amount of co-financing from the Municipality of Yerevan for the renovation of a projected 50 public buildings and 10 MABs in Yerevan from 8 million USD to 57 million USD, in total covering the proposed extended period of the project (project outputs 3 and 4). Energy Efficiency co-financing from the partner will be ~ 17.1mln USD

- New co-financier: Asian Development Bank - Renovation of 6+38 public schools (Armenian Territorial Development Fund is implementing the program), 45.5 million USD loan agreement is signed, (project output 4). Energy Efficiency co-financing from the partner will be ~ 9mln USD.

- New co-financier: World Bank - Renovation of 80 pre-schools and 4 upper secondary schools in partnership with the Project Implementation Unit of the Ministry of Education, Science, Culture and Sports of the Republic of Armenia, 14.1 million USD loan is signed in 2022, (project output 4). Energy Efficiency co-financing from the partner will be ~ 2.2mln USD

- New co-financier: Eurasian Development Bank - Renovation of 20 public buildings in partnership with the Renewable Resources and Energy Efficiency Fund (R2E2 is implementing the program and control the fund allocation)– 3.9 million USD, (project output 4). Energy Efficiency co-financing from the partner will be ~ 3.1mln USD

- New co-financier: Government of Armenia (via the State Subventions program and line ministries/agencies) funding the retrofit of MABs and public buildings: education, culture and healthcare facilities, administrative buildings – 79.6 million USD, (project output 4). Energy Efficiency co-financing from the partner will be ~ 29.9mln USD

- New co-financier: Ministry of Territorial Administration and Infrastructure, has introduced the state subsidy program for the green loans via local banks (subsidized interest rate). The aim is to incentivize the EE retrofits of single-family houses - mostly in rural areas of Armenia. (project output 4). Energy Efficiency co-financing from the partner will be ~ 1.82mln USD

- New co-financier: Armenian General Benevolent Union, full retrofitting of youth center in Yerevan – 4 million USD (project output 4). Energy Efficiency co-financing from the partner will be ~ 0.84mln USD
- Increased amount of UNDP Armenia contribution– from 1.42 million USD to 3.07 million USD, (project outputs 1 & 5).

- European Investment Bank loan financing – decreased from 86.25 million USD to ~14.8 million USD.

Refer to a detailed list of agreements and their status, risk level (of non-materialization as of 30th May 2023) in annex 5. The GCF grant is calculated after the partner has concluded the tendering and contracting processes for selected buildings retrofit and has clear a BOQ (Bill of Quantities) for civil works in place. Out of this BOQ, energy efficiency related costs (that are validated against eligibility criteria of respective Operations Manual) are confirmed. Based on the type of building- a respective share of the GCF grant is paid in line with Operations Manual.

The GCF grant is transferred to the partner (separate) project bank account and is allowed to be used only after the respective share of energy efficiency works are concluded, and results validated by the project engineers.

Then the partner is allowed to use the GCF grant amount from that account (e.g., pay his contractor) and report back to UNDP including all the financial documents, invoices etc. Thus, GCF grant is deployed on a quasi-performance-based basis. Ratios/shares of GCF grant are prescribed as per Operations Manuals. In case the final cost of construction is lower than cost of the contract, the party is transferring back the difference to UNDP to maintain the prescribed level of ratios.

As a part of monitoring and verification of projects' energy efficiency as well as GHG emission reduction, the energy audit is conducted for each building based on the approved design. The energy efficiency passport is being developed for the building with calculation of energy performance indicators and GHG emissions at the baseline and project scenarios. Energy savings as well as GHG reduction are quantified (annually and 20 years).[7]

UNDP can submit to the GCF Secretariat, as part of the 5th, 6th and 7th disbursements the following:

- For disbursement 5: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 8mln for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 5 will be applied.

- For disbursement 6: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 12.3mln for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 6 will be applied.

- For disbursement 7: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 5.7mln for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 7 will be applied.

The referenced amounts correspond to 70 per cent of cumulative co-finance envelope which is required for GCF grant subsidy to materialize for the given tranche and will represent a firm commitment, which will following receipt of the GCF proceeds (disbursement) be translated into relevant legal agreements. UNDP is not in a position to sign the legal agreements prior to receiving GCF grant.

[7] Engineers are continuously monitoring the retrofit process and progress that the energy efficiency related works are implemented in line with the Operations Manual - based on expert verification the decision is taken to release the GCF grant.

A request for partial disbursement was submitted to GCF on 24 February 2023 – for 2.4 million USD and approved by GCF Secretariat in April 2023. As per request of the GCF, the number of disbursements was increased from 6 to 7 and the amounts are adjusted in view of the partial disbursement amount. Please see below the updated disbursement schedule:

Disbursements	GCF proceeds, (USD)	Indicative expected date of disbursement
Disbursement 1	729,000	Disbursed
Disbursement 2	1,608,000	Disbursed
Disbursement 3	3,596,000	Disbursed
Disbursement 4	2,400,000	15 June 2023
Disbursement 5	3,600,000	30 March 2024
Disbursement 6	5,500,000	30 January 2025
Disbursement 7	2,567,000	30 May 2025
Total	20,000,000	

This is in line with the workplan and cashflow planning (for UNDP to be able to reach 70 per cent of the expenditures) while allowing for more operational smoothness and efficiency in view of the previous project experience and the time it took to receive previous disbursements from GCF (2-5 months).

B.5. CHANGES IN PROJECT FINANCING INFORMATION? Yes ☒ No ☐ If Yes, Please elaborate below
(Please see annex 5 for the proposed revisions of the Schedule 2 of the FAA)

	Financial Instrument		Amount	Currency	Tenor		Pricing (% interest or IRR for equity)
(a) Total project financing	**(a) = (b) + (c)**		102.7	million USD ($)			
(b) GCF financing to recipient	Grant		20	million USD ($) Options	N/A		N/A
	** The UN official exchange rate of the period when the co-financing letter is received from the partner is used*						
	Total requested		20	Options			
(c) Co-financing	**Financial Instrument**	**Amount**	**Currency**	**Name of Institution**	**Tenor (years)**	**Pricing (% interest or IRR for equity)**	**Seniority**

to recipient	Grant	29,862,746	USD[8]	Government of Armenia (State Subvention Program, Ministry of Territorial Administration and Infrastructure, Ministry of Health, Office of Prime Minister)	N/A	N/A	N/A
	Grant	17,096,000	USD[9]	Municipality of Yerevan	N/A	N/A	N/A
	Loan	9,037,777	USD	Asian Development Bank	25 years (incl. grace period of 5 years)	2% per annum	N/A
	Loan	14,824,318	USD[10]	European Investment Bank			N/A
	Grant	3,122,479	USD	Eurasian Development Bank	N/A	N/A	N/A
	Loan	2,200,000	USD	World Bank	3 years	1.73% per annum	N/A
	Loan	1,820,000	USD	Local Banks	N/A	N/A	N/A
	Grant	843,069	USD	Armenian General	N/A	N/A	N/A

[8] Local currency is the Armenian drams (AMD). USD 1=AMD 384.31 as per UN Operational Rates of Exchange for 01 May 2023. Exchange rates are updated regularly (twice in a month) and available **here**.

[9] Co-financing from Yerevan municipality as of the FP was USD 8mln (under components 3 and 4) plus new commitments are AMD 16bln and USD 1.4mln (both under component 4). Local currency is the Armenian drams (AMD). USD 1=AMD 384.31 as per UN Operational Rate of Exchange for 01 May 2023. Exchange rates are updated regularly (twice in a month) and available **here**.

[10] Loan of the European Investment bank is provided in Euros (EUR 7mln). USD 1=EUR 0.844 as per UN Operational Rates of Exchange for 01 Dec 2017 (date when financial agreement was signed). Exchange rates are updated regularly (twice in a month) and available **here**.

				Benevolent Union			
	Grant	3,071,603.14	USD	UNDP (parallel)	N/A	N/A	N/A
	Grant	420,000	USD	UNDP (Cash)	N/A	N/A	N/A
	Grant	400,000	USD	Government (Ministry of Environment, In kind)	N/A	N/A	N/A
	Lead financing institution: N/A						
	** Please provide a confirmation letter or a letter of commitment, for any additional co-financing resulting from changes, issued by the co-financing institution.*						

C.1. ANY UPDATES TO BACKGROUND INFORMATION ON PROJECT / PROGRAMME SPONSOR (EXECUTING ENTITY)?
YES ☐ NO ☒ IF YES, PLEASE ELABORATE

N/A

C.2. ANY INSTITUTIONAL / IMPLEMENTATION ARRANGEMENTS? Yes ☒☐ No If yes, please elaborate

The project's overall governance structure – including the organizational structure, as well as the roles and responsibilities of the project management unit, and Project Board – remains unchanged.

Then Minister of Environment/GCF NDA/Co-Chair of the Project board is committed to support materialization of all the presented co-financing flows, including by coordinating the actions of respective ministries and agencies. In its turn UNDP to timely provide all the information and statuses of each co-financing flow.

Following UNDP rules and procedures, it is important to distinguish between the executing entity (EE) (implementing partner (IP)) and a responsible party. Both have an execution function; however, the EE/IP has the overall execution responsibility and accountability under the Subsidiary Agreement (as defined in the AMA and FAA). This has been the standard for all UNDP projects with GCF, which are implemented under a national implementation modality. As per UNDP internal rules, there can be, and in this project, there is, only one executing entity/implementing partner (who has rights to contract other responsible parties or partners). In this context, the executing entity contracted UNDP to provide support service on procurement and administration, giving UNDP the right to sign responsible party agreement on its behalf. This is in line with UNDP internal rules and procedures.

The methodology for construction and supervision of installation of building energy retrofits by the project remains as stated in the Operational Manuals developed by the project and approved by the GCF in 2020.

All the partners underwent UNDP Partner Capacity Assessment (PCAT). Following UNDP rules, (when the co-financing amount is > USD 150,000) Micro-assessments (Harmonized Approach to Cash Transfers) are conducted prior to signing the RPAs/LoAs, as follows[11]:

- Environmental Project Implementation Unit (EPIU), a state institution of the Ministry of Environment of the Republic of Armenia. The EPIU will be responsible for implementation of Component 1 of the Project on building sector MRV and knowledge management. The total amount of GCF grant is USD 700,000.
- Renewable Resources and Energy Efficiency Fund (R2E2) - under this Agreement, R2E2 Fund acting as Responsible Party shall implement the energy efficient retrofitting activities of up to 20 buildings. Total amount of GCF grant is 780,000 USD (AMD 300,000,000[12]).
- Armenian Territorial Development Fund (ATDF) - under this Agreement, the ATDF acting as Responsible Party shall implement the rehabilitation, including energy efficient retrofitting activities of 6 (six) school buildings. The total amount of GCF grant is 560,000 USD (AMD 215,000,000).
- Armenian General Benevolent Union (AGBU) - under this Agreement, the AGBU acting as Responsible Party shall implement the rehabilitation, including energy-efficient retrofitting activities of a Malatia-Sebastia Youth Center (A and B buildings) in Yerevan, Armenia. The total amount of GCF grant is 211,000 USD (AMD 81,000,000).
- Ministry of Health (MoH) - under this Agreement, the MoH acting as Responsible Party shall implement the rehabilitation, including energy-efficient retrofitting activities of 2 large healthcare facilities in Yerevan, Armenia. The total amount of GCF grant is 752,000 USD (AMD 288,807,000).
- 16 Communities (Ashtarak, Vedi, Argel, Stepanavan, Spitak, Tashir, Kajaran, Sisian, Gyumri, Dilijan, Berd, Hrazdan, Gavar, Akhtala, Alaverdi, Ijevan) signed LoAs with the UNDP on behalf of the EE- under these Agreements communities acting as Responsible Parties are implementing retrofits (including energy efficiency) of residential and public buildings (so far implemented 98 MABs and 5 public buildings EE retrofits). The total amount of GCF grant is 2, 170,000 USD (AMD 833,540,000).
- Health and Labor Inspection Body via Office of Prime Minister (HLIB/OPM) - under this Agreement, OPM acting as Responsible Party is implementing the EE retrofitting activities of one public building. The total amount of GCF grant is 38,400 USD (AMD 14,745,000).
- As per the FAA - Municipality of Yerevan (YM) - under this Agreement, YM acting as Responsible Party is implementing the energy efficient retrofitting activities of public buildings. As of February 2023, YM has conducted EE retrofits in 33 public buildings with the amount of GCF grant of 1,295,000 USD (AMD 497,570,000).
- Ministry of Finance (MoF) is expected to be engaged as a Responsible Party for energy-efficient retrofitting activities of public buildings.
- Ministry of Territorial Administration and Infrastructures (MoTAI) is expected to be engaged as a Responsible Party for the green loan program with subsidized interest rate for the EE retrofits of single-family houses - mostly in rural areas of Armenia.
- Committee of Urban Development (UDC) is expected to be engaged as a Responsible Party for energy-efficient retrofitting activities of public facilities (schools, kindergartens, sports schools, etc) in Armenia.
- Project Implementation Unit of the Ministry of Health (MoH PIU) is expected to be engaged as a Responsible Party for energy-efficient retrofitting activities of healthcare facilities in Armenia.

[11] The detailed table presenting all the co-financiers/responsible parties is given in the annex 5
[12] AMD-USD exchange rate is 384.31 as per the UNDP official rate as of 1 May 2023.

RP name	Type of agreement	Date signed	Component
EPIU	LoA	22.09.2021	1
Ministry of Health	LoA	20.04.2022	4
Armenian Territorial Development Fund (ADB)	RPA	17.03.2022	4
Office of Prime Minister /HLIB/	LoA	07.12.2022	4
Municipality of Yerevan	LoA	01.12.2021 and 16.03.2022	4
Renewable Resources and Energy Efficiency Fund (EDB)	RPA	18.03.2022	4
Ministry of Education PIU (WB)	LoA	16.03.2023	4
16 communities in the frames of State Subvention Program	LoAs	2020-2023	4

There is a well-structured process to ensure that funds are spent on eligible measures as per the Operations Manual:

1. Partners' capacities are assessed through the UNDP Partner Capacity Assessment Tool (PCAT), which assesses the management and other capacities of the relevant entity. The PCAT is completed for all implementing partners/responsible parties.[13]
2. Micro-assessments (Harmonized Approach to Cash Transfers) are conducted.[14]
3. Spot checks for partners with $50,000 or a higher yearly budget are being scheduled and conducted. (For actual reported expenditures below $50,000, UNDP offices may carry out a spot checks at their discretion. Additional spot checks or audits may be required based on the results of the prior spot checks. A spot check is not required in the year reported expenditures are expected to be audited.)
4. The UNDP Country Office undergoes audit every five years.[15]
5. Audits of partners in line with UNDP rules: For partners with a "Low" and "Medium" Adjusted Risk Rating, internal control audits are to be conducted at least once every other year if annual expenditure exceeds or is equal to $200,000 per year; otherwise, spot checks should be conducted where reported expenditures exceed or are equal to $50,000. For Partners with a "Significant" Adjusted Risk Rating, financial audits are to be conducted every year when expenditures exceed or are equal to $200,000 per year and if a Partner receives two sequential audits with unqualified opinion, and results of spot checks are satisfactory, the Partner's risk rating may be adjusted, and internal controls audits and spot checks performed for the remaining periods in accordance with the Partner's revised Adjusted Risk Rating. For Partners with "High" Adjusted Risk Rating, UNDP internal written clearance is required to engage and issue cash transfers to the partner. For Non-Audited

[13]https://popp.undp.org/SitePages/POPPSubject.aspx?SBJID=452&Menu=BusinessUnit
[14]https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/FRM_Financial%20Management%20and%20Implementation%20Modalities_Harmonized%20Approach%20to%20Cash%20Transfers%20(HACT).docx&action=default&DefaultItemOpen=1
[15] Please, select Armenia in the Audited Business Unit drop down menu to see the latest 2018 country audit report: https://audit-public-disclosure.undp.org/index.cfm

Partners, financial audits are to be conducted every year when expenditures are greater than or equal to $200,000 per year. See Table 2 for the guidance on the frequency of assurance activities.[16]

6. Retrofit designs are being reviewed and eligible measures as per the Operation Manuals are being identified and quantified prior to signing partnership agreements by UNDP.
7. Most of buildings are identified and eligibility of measures/buildings confirmed. In some cases/co-financiers (e.g. R2E2 fund) the buildings pipeline is formed based on applications they are receiving. However, number of buildings, their type and list of eligible measures are identified and clearly reflected in the agreements (LoAs and RPAs).

During the implementation stage, retrofits implemented within these partnerships are regularly monitored and technical assistance is provided on demand.

16 https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/FRM_Financial%20Management%20and%20Implementation%20Modalities_Harmonized%20Approach%20to%20Cash%20Transfers%20(HACT).docx&action=default

C.3. Updated Timetable of Project/Programme Implementation

Basis for the new planning:

- Analysis of the overall country/sector context, Government midterm (2023-2025) plan for funding retrofits of public buildings with conditionality to consider energy efficiency measures and cooperate with the Project.
- Plans of project partners/co-financiers with respect to the timelines for the retrofitting works.
- Re-confirmed interest and commitment of the Government of Armenia at national [both Prime-Minister's level and line ministries], as well regional and municipal levels.
- Following project advocacy, the government introduced breakthrough changes into the national legislation – Budget Code amendments, adjustment of the State Subvention Programme. These changes created the favorable legal environment for accelerated project implementation.

The below timelines are relevant if the decision on restructuring is taken no later than in July 2023 and 4th disbursement received no later than in May 2023.

Legend

X = Completed

X = Initiated

X = Not Yet Initiated

Task	2017		2018				2019				2020				2021				2022				2023				2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q 32	Q 33	Q 34	Q 35	Q 36	Q 37	Q 38
Output 1.1 MRV systems in the buildings sector in Armenia established		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.1.1 MRV framework		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.1.2 EMIS implementation					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TASK	2017		2018				2019				2020				2021				2022				2023				2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q 32	Q 33	Q 34	Q 35	Q 36	Q 37	Q 38
Output 1.2 Knowledge management and MRV information disseminated		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
1.2.1 Stakeholder engagement		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
1.2.2 Website			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
1.2.3 Formats for dissemination		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
1.2.4 Information provision							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Output 2.1 Public instruments for the promotion of investment in EE selected		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
2.1.1 Public instrument selection		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Output 2.2 Support provided to on-going legal reform in the field of EE			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.2.1 Support to authorities			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.2.2 Introduction of legislation					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.2.3 Public building legislation							X	X	X	X	X														X	X	X	X	X	X	X	X	X	X	X	X
Output 2.3 Support provided for the creation of an enabling policy framework for EE		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TASK	2017		2018				2019				2020				2021				2022				2023				2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q 32	Q 33	Q 34	Q 35	Q 36	Q 37	Q 38
retrofits in multi-owner residential buildings																																				
2.3.1 Support for HOAs		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 2.4 Support provided to building owners / managers / owner associations / ESCOs on legal matters related to EE retrofit projects							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
2.4.1 Support for multi-owner buildings							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
2.4.2 ESCOs							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
Output 2.5 Exit strategy implemented													X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.5.1 Exit strategy													X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.1 Technical assistance provided to banks and other financial institutions		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.1.1 Market facilitation		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.2 Technical assistance for HOA market facilitation provided to banks		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.2.1 Support to banks		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.3 Technical assistance provided to local government		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

TASK	2017		2018				2019				2020				2021				2022				2023				2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q 32	Q 33	Q 34	Q 35	Q 36	Q 37	Q 38
to develop EE retrofit projects for publicly owned buildings																																				
3.3.1 Publicly-owned buildings		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.4 Access to affordable capital for EE retrofits provided			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.4.1 Technical structure for financial instruments			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3.4.2 Verification							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Output 3.5 Marketing platform created			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
3.5.1 Marketing support			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Output 4.1 Targeted financial incentives provided to vulnerable groups to help address the affordability gap							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.1.1. Targeted incentives							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Environmental and Social Safeguards	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Implementation of Gender Action Plan				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Inception report (including baselines assessment	X	X	X																																	
First Annual Project Report (APR)			X																																	

TASK	2017		2018				2019				2020				2021				2022				2023				2024				2025				2026	
	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q 29	Q 30	Q 31	Q 32	Q 33	Q 34	Q 35	Q 36	Q 37	Q 38
Interim Independent Evaluation Report													X	X																						
Project Completion Report (last APR)																																			X	
Final Independent Evaluation Report																																				X
Project Board meetings	X				X									X				X				X		X						X				X		

D.1. ANY CHANGES TO VALUE ADDED FOR GCF INVOLVEMENT? Yes ☐ No ☒ If yes, please elaborate

The project's strategy for the proposed 36-month extension is based on a foundation of plans and partnerships built over the past two years (when the investment component of the project was unlocked), supported by two core elements for expedited implementation of investment Component 4: 1) a robust and diversified pipeline of energy efficiency renovation projects; and 2) a streamlined process for timely delivery and verification of the renovations. GCF grant remains crucial both with respect to the provision of technical assistance and investment component. The reasoning behind the level of the GCF grant requested for retrofits is described in detail in the operational manuals for each building type (approved by GCF) and has not changed.

As reflected in the prepared refocus analysis submitted to GCF in 2020, the project has a revised output-level approach to how it will apply GCF-funded technical assistance and investment to systematically decarbonize existing building stock. The project has made further adjustments to its plans for the number of buildings to be retrofitted across various building types, with further emphasis on public buildings, where there is greater relative certainty of co-financing and clarity about specific buildings to be renovated, and reduced emphasis on MABs. These are reflected in section F.1. This shift boosts efficiency and cost-effectiveness, as the lowest costs per tonne of GHG emissions reduction and per beneficiary apply to public buildings, with higher costs for MABs and higher costs still for single-family houses.

The project will define the specific local partners for these renovation projects in alignment with the line ministries' annual budget cycle and the subvention programme's established application and approval process. The project plans to develop and maintain the flow of high-quality renovation projects via the following specific steps:

- Expanded training and direct support for apartment owner associations on how to organize, collect funds, achieve consensus on energy efficiency upgrades, and work with community administrations to apply for State Subvention Programme/UNDP-GCF energy efficiency subsidies.
- Expanded promotional outreach among homeowners about the benefits of energy efficiency, including greater attractiveness, comfort, energy savings, and increased property value, as well as the added inducement of subsidy funds.
- Expanded training and outreach among community administrations, emphasizing the benefits to citizens and communities of EE improvements – lower monthly expenses, increased property value, and improved living conditions.
- Outreach to line ministries, facilitated by the Ministry of Finance, about the advantages of pursuing comprehensive energy efficiency improvements to buildings with the assistance of the project.
- Expanded training and outreach among providers of EE renovation services, with a specific eye toward encouraging them to promote and market their services.
- Training, procedural clarifications, and support for staff capacity enhancements at state building code enforcement agency, leading to an affirmed and effectively implemented mandate for enforcing building energy performance requirements for capitally renovated buildings.

The structure of co-financing was changed after the refocus analysis (2020). Changes were introduced as a result of the changes to the targets with respect to the different building types. Also, it is worth to mention, that compared to 2019-2020 the market prices for energy efficiency works and materials have grown significantly which also results in higher level of leverage co-financing need. Further, fewer residential buildings and increased number of public buildings will lead to an increased number of project overall beneficiaries.

D.2. ANY CHANGES TO EXIT STRATEGY? Yes ☒ No ☐ If yes, please elaborate

It is proposed to amend the condition 9.02 (e), which requires the submission of the exit strategy, to be submitted to GCF not 60 months but 84 months after the FAA effectiveness in view of the proposed project end date extension. This will enable the project to prepare an exit strategy that will be relevant at that given point of time (assuming the extended implementation timeline), considering all the progress made and results/impact to be maintained prior to the new project end date. Below is presented the general outline/approach from the draft Exit Strategy:

Preliminary Exit Strategy for Component 1 – Phasing over strategy

The exit strategy for this component is embedded in the activities of the project. It is envisaged that the continuity of the outcomes will be assigned to the government agency, i.e. Environmental PIU of the Ministry of Environment of the Republic of Armenia, in the context of assuring the sustainability of operations of monitoring-reporting-verification (MRV) system. The project will further provide hardware, software, guidelines, and methodologies, as well as extensive training and capacity building activities to assure smooth transition/hand-over of the MRV system.

Preliminary Exit Strategy for Component 2 – Phasing down strategy

For this component, a Phasing Down strategy is used. The Project efforts will be focused on enabling policy framework for EE retrofitting, thus making the activities under the Project a regular function of the public administration and local self-governance. The strategy envisages development of legal-regulatory acts, guiding documents, operational manuals and training documents to gradually transfer the project activities to the relevant stakeholders i.e. authorities, private developers, beneficiaries.

Preliminary Exit Strategy for Component 3 – Phasing over and out strategy

Exit strategy for this component is Phasing over and Phasing out - for the municipal EE projects in residential sector in communities other than Yerevan as well as for those in Yerevan.

The Project envisages the development of a business model that allows leveraging private funds and institutions into the building EE sector. Implementation of residential EE programs in multi-apartment buildings and single-family houses will involve local commercial banks, private ESCOs and suppliers, as well as homeowners to organize, finance and implement the EE measures. This gradually will phase out the Project and scale up investments in post project period. For this to happen the Project shall elaborate all necessary contractual arrangements and drafts, conduct awareness raising campaign, capacity building for banks and private ESCOs.

Phasing Out strategy is for the projects in smaller municipalities, where communities will select and identify building EE retrofits, finance fully or partly the investments, and support residents and contractors in sustainable maintenance and operation of the buildings.

Preliminary Exit Strategy for Component 4 – Phasing out strategy

Project will design and implement the Financial Incentive (FI) Program for Multi-Apartment Buildings (MABs) and for the Public Buildings (PBs) to stimulate investment in EE building retrofit.

The Phasing Out strategy is applied for this component for the municipal EE retrofitting efforts for public and municipal buildings. This means the Project envisages creation of resource centers at the municipalities to support with preparation and operation of EE retrofitting projects and maintenance of the assets thereof.

For the single-family houses EE retrofitting a Phasing Over strategy is used. It is planned to have extensive awareness raising and capacity building of financial institutions, as well as cash-back incentive bonuses to promote lending of the

local financial institutions to the EE retrofit financing. After the Project this activity will become a standard business for financial institutions.

The Project plans to handover the organization role of the Project expert team to the local institution, i.e. Armenia Renewable Resources and Energy Efficiency Fund (R2E2). The Fund has experience and capacity to finance and implement EE retrofit projects. Involvement of R2E2 in implementation of the Project will add a value to it and will ensure sustainability and replicability of the activities performed during the Project period.

E.1. ANY CHANGES TO IMPACT POTENTIAL? YES ☒ NO ☐ IF YES, PLEASE ELABORATE

Potential of the project/programme to contribute to the achievement of the Fund's objectives and result areas

E.1.1. Mitigation / adaptation impact potential

The project is to achieve greenhouse gas (GHG) emission reductions from improved energy efficiency and lower energy-intensity buildings, targeted at an estimated ktCO_2 per year or 1.387 million tCO_2 over the 20-year lifetime of the EE interventions. Based on the project calculations around the identified pipeline of the project, the GHG emission target is not expected to be reduced, using the original project methodology and grid emission factor of 0.436. However, if the target value will be recalculated with the grid emission factor of 0.390 and compared to Ex-Post estimates using a conservative approach (as requested by GCF) the decrease in the impact will not be more than 5%[17]: 1.118 vs 1.177 million tCO_2 over the 20-year lifetime of the EE interventions.

The project is also to have 280,000 beneficiaries, which is an increase from the original FP number. The proposed change for the extended period of the project duration is to increase a share of public buildings targeted by the project. The co-financing required is increased because of retrofits of public buildings cost more than in case of residentials. In other words, to achieve the project targets/goals with new composition of buildings – more leveraged co-financing is required, which is now secured by the project.

E.1.2. Key impact potential indicator

GCF core indicators	*Expected tonnes of carbon dioxide equivalent (t CO_2 eq) to be reduced or avoided (Mitigation only)*	*Annual*	100 ktCO_2 per year
		Lifetime	1.118[18] million tCO_2 over 20-year lifetime
	• *Expected total number of direct and indirect beneficiaries, disaggregated by gender (reduced vulnerability or increased resilience);* • *Number of beneficiaries relative to total population, disaggregated by gender (adaptation only)*	*Total*	N/A (adaptation)
		Percentage (%)	N/A
Other relevant indicators	N/A		

[17] Original target as per FP is 1,388,332 tCO2/ 20 years, which was calculated using the GHG emission factor of 0.436 (as approved by GCF in 2017 in the Funding Proposal). As per GCF request, this target figure was recalculated using the GHG emission factor of 0.390 and is now equal to 1,176,690 tCO2/ 20 years. The emission reductions assessed based on ex-ante and the ex-post data are equal to 1,118,289 tCO2/ 20 years, and the difference between the target and the GHG ER makes not more than 5%.

[18] The conservative approach based on ex-post data and lower GHG emission factor is used here.

E.2. ANY CHANGES TO OTHER INVESTMENT CRITERIA[19]? YES ☐ NO ☒ IF YES, PLEASE PROVIDE AGAINST EACH INVESTMENT CRITERION THAT IS AFFECTED BY THE CHANGE, AS APPLICABLE

There are no changes to the project's fulfillment of other investment criteria, relative to the original Funding Proposal. The project can offer the following positive updates:

The **Sustainable Development Potential** of the project, involving various environmental, socioeconomic, and gender-related co-benefits of the implementation of EE upgrades in both residential and public buildings, remains on track for fulfillment as noted in the Funding Proposal.

The project continues to fulfill the **Needs of the Recipient** investment criterion as envisioned in the Funding Proposal, as EE retrofits alleviate energy poverty among vulnerable citizens while also reducing state and communities' budget spending on energy for public buildings. The project also helps to increase the effectiveness and impact of the State Subvention Programme and is expected to have similar effects on the new state-funded EE loan subsidy program for the residential sector.

Country Ownership of the project remains strong, as the Government of Armenia and its various ministries, the Municipality of Yerevan, and local communities throughout the country have welcomed the project's results and look forward to further fruitful collaboration leading to expanded impact. The commitment of the Government to building renovation is reflected in the budgeting of US $291 million in state budget funds for building renovation in 2023-2025. The approved 2023 budget for the State Subvention Programme is US $55 million, with the expectation of continued funding, thereafter, based on the success and popularity of the program. The project has already been engaging in high-level discussions with the Ministry of Finance and the Deputy Prime Minister's offices to ensure GCF-funded integration of incremental energy efficiency measures into these budgeted renovation plans, up to the limits of the project's Component 4 budget.

The project also remains squarely aligned with the Government's climate commitments, including its Nationally Determined Contribution for 2021-2030, which was approved in April 2021.

The project has continued and enhanced its fulfillment of the investment criterion of **Efficiency and Effectiveness** by

1) applying increased emphasis on renovation of public buildings, which have greater Fund-level impacts per GCF dollar than other building types;

2) using new finance mechanisms involving a diversified set of partners – state, donor, commercial, and private – to maximize the impact of GCF grant funds. The total cost of EE retrofits of 142 buildings through the end of December 2022 has been AMD 22.2 billion, including the co-financing by the Project of AMD 1.6 billion, or about 7 percent.

E. 3. Engagement with NDAs, civil society organizations and other relevant stakeholders

[19] Besides impact potential, the other GCF investment criteria are paradigm shift potential; sustainable development potential; needs of the recipient; country ownership; and efficiency and effectiveness

The AE regularly consults the National Designated Authority (the Ministry of Environment of the Republic of Armenia). Furthermore, the project, with UNDP's active facilitation, has mutually supportive relations with the Government of Armenia, including the Office of the Prime Minister, the Ministry of Finance, the Ministry of Territorial Administration (which runs the State Subvention Programme) and numerous line ministries. Collaboration with the Municipality of Yerevan remains strong and positive. Project staff and UNDP Country Office senior management regularly engage with all these parties via very frequent email correspondence, one-on-one meetings, and meetings of the Project Board. All updates to planned project activities have been discussed with these and other stakeholders and providers of co-financing.

** The information can be drawn from the project/programme appraisal document.*

F.1. ANY CHANGES IN ECONOMIC AND FINANCIAL ANALYSIS? Yes ☐ No ☒ If yes, please elaborate

In 2020, Armenia faced a double challenge: outbreak of the COVID-19 pandemic and escalation of military hostilities in the Nagorno-Karabakh conflict area. These challenges put the achieved development gains at risk due to an array of negative consequences to people, businesses, and economy. This situation was also a severe test of the nation's resilience to cope with two complex simultaneous challenges, that mutually reinforced each other.

As a result, in 2020-2021 when Project investment component was opened for operation the Project couldn't progress with the initially envisaged pace as the Government and other major stakeholders inevitably had to prioritize life-saving actions across the country. Importantly, these developments also complicated and delayed implementation of the planned activities in line with Project Refocus Analysis.

The Project Interim Evaluation Report (September 2020) considered the Refocus Analysis and recommended the Project extension so that sufficient time is allocated for implementation of the revised financing strategy. Moreover, GCF offered an opportunity for extending its projects worldwide, considering delays due to the COVID-19 pandemic.

The economic/financial analysis is conducted using the same model that was used for refocus analysis in 2020. That model is based on the GCF co-financing shares as per approved Operation Manuals as well as is reflecting only the actual co-financing (leveraged from partners) used for energy efficiency (not general retrofit costs). See also section F.1 - "Average cost per retrofit".

Armenia as a former Soviet state is still using construction cost estimation norms and regulations developed during soviet time as Building Codes, along with developed composite indices for cost adjustments to current periods.

The Estimation Norms, which is a collection of 49 normative books (classified by category of construction work of building codes, merged by type of construction works), provide detailed technical computational resources for the construction work, with a variety of coefficients adjusting weather conditions, elevation above sea level and different other elements.

These directories present material, labor, and equipment rates on the basis of specific base date and are the normative basis for the cost estimation system for construction projects. Unit prices used in cost estimates related to construction materials and expenses associated with workmanship and use of machinery are taken from reference values, which are defined/updated and published by the Ministry of Finance of Armenia on monthly basis.

The unit prices and various coefficients embedded in bill of quantities and used for formulation of cost estimates for construction projects are based on the references defined and published by the Ministry of Finance of Armenia on a monthly basis. In accordance with coefficients published by the Ministry of Finance of RA, the unit costs and expenses associated with workmanship and use of machinery have increased in a steady manner, for December 2019 and February 2023 (AMD):

The use of the GCF grant subsidy scheme remains unchanged with respect to the principles presented in the Refocus Analysis and Operational Manual. Please see below:

Building type	**Percentage of total funding for retrofits of each building type provided by the various funding sources**				
	Private finance (households)	**Public finance (municipality/ local authority)**	**Public finance (Government of Armenia)**	**GCF grant**	**Total**
Public buildings - technical package 1 (full retrofit) [a]	N/A	N/A	80%, largely through existing Project Implementation Units of the Government, using the loan and/or grant finance from ADB, WB and EDB, blended with state budget co-finance.	20%	100%
Public buildings – technical package 2 (simple retrofit)[a]	N/A	30-50%, through- Communities' budget in the frames of Subvention Program, Yerevan Municipality own budget	40-60%, through- State budget in the frames of Subvention Program, Yerevan Municipality own budget	10%	100%
MABs with state subsidy	5% contribution to investment as well as future maintenance costs.	Typically, 15%, range 5% - 20% depending on size of community budget and subsidy from GoA	State Subvention Programme, typically 60%, can range between 55% - 70%, depending on the distance from the capital	25%	100%
MABs Not eligible for state subsidy	No contribution to investment but to the future maintenance costs.	Through Municipality of Yerevan own budget, 78-80%	N/A	20% - 22%	100%
Single-family homes	91% contribution from home owners	N/A	N/A	9%	100%

[a] As defined in the Operational Manual (please refer to annex 7), Technical Package 1 includes measures to ensure compliance with Class C energy efficiency requirements. Technical Package 2 is less ambitious and includes measures to ensure a minimum 25% in specific energy consumption compared to baseline.

(Please see annex 8)	Number of buildings			Average cost per retrofit (USD)			Average level of grant (%)			Average grant per building (USD)			Total amount of GCF grant (million USD)			Total investment (million USD)		
	FP	2020 [20]	2023	FP	2020	2023	FP	2020	2023	FP	2020	2023	FP	2020	2023	FP	2020	2023
Public buildings - technical package 1 (full retrofit)[a]	23	20	103	250,000	250,000	300,000	5%	20%	20%	12,500	50,000	60,000	0.287	1.0	6.18	5.75	5.0	30.9
Public buildings - technical package 2 (simple retrofit)[a]	150	200	202	95,000	160,000	115,000	8%	10%	10%	7,600	16,000	11,500	1.14	3.2	2.32	14.25	32.0	23.2
MABs[21]	290	-	-	112,430	-	-	22%	-	-	24,735	-	-	7.173	-		34.8	-	-
MABs under state subsidy programme	-	319	188	-	109,630	110,000	-	25%	25%	-	27,408	27,500	-	8.7	5.17	-	35.0	20.7
MABs not eligible for state subsidy	-	40	10	-	109,630	140,000	-	20%	20%	-	21,926	28,000	-	0.9	0.28	-	4.4	1.4
Single-family homes	6,000	200	200	10,000	10,000	10,000	9%	9%	9%	900	900	900	5.4	0.2	0.18	60.0	2.0	2.0
Total	**6,463**	**779**	**703**										**14.0**	**14.0**	**14.1**	**114.8**	**78.4**	**78.2**

[a] The amount of grant that a building receives is set according to the package of measures implemented. In practice, the package for each building will be defined individually and the numbers of buildings implementing each package may deviate from those provided here.

[20] Figures presented under the 2020 columns are from the Refocus Analysis prepared for this Project in 2020.

[21] The numbers are now reconciled to remove the discrepancy that appears in the FP which originally exceeded the approved grant

	Number of buildings			GHG reduction (tCO_2 / year)			Number of beneficiaries		
	FP	2020[22]	2023	FP[23]	2020[24]	2023[25]	FP	2020	2023
Public buildings - technical package 1 (full retrofits)	23	20	103	4,937 (4,184)	4,293 (3,639)	(24,001)	23,000	20,000	103,000
Public buildings - technical package 2 (simple retrofit)	150	200	202	14,243 (12,072)	26,400 (26,099)	(19,037)	105,000	140,000	141,400
Multi-family apartment buildings	290	-	-	22,997 (19,491)	-	-	52,200	-	-
MABs under state subsidy programme	-	319	188	-	35,090 (33,544)	(11,721)	-	57,420	33,840
MABS not eligible for state subsidy	-	40	10	-	3,208 (3,165)	(791)	-	7,200	1,800
Single-family homes	6,000	200	200	27,239 (23,087)	360 (364)	(364)	30,000	1,000	1,000
Total	**6,463**	**779**	**703**	**69,416 (58,834)**	**69,351 (66,811)**	**(55,914)**	**210,200**	**225,620**	**281,040**

[22] Figures presented under the 2020 columns are from the Refocus Analysis prepared for this Project and submitted to GCF in 2020.
[23] Figures in brackets are recalculated using the new emission factors as agreed with GCF (for grid: 0.390 for gas: 0.205). Emission factors during FP stage were: 0.436 and 0.247 respectively.
[24] Figures in brackets are recalculated using the new emission factors as agreed with GCF (for grid: 0.390 for gas: 0.205). Emission factors during refocus were: 0.4038 and 0.206 respectively.

F.2. ANY CHANGES IN TECHNICAL EVALUATION? Yes ☐ No ☒ If yes, please elaborate

N/A

F.3. ANY CHANGES IN ENVIRONMENTAL, SOCIAL ASSESSMENT INCLUDING GENDER CONSIDERATIONS? Yes ☒ No ☐ If yes, please elaborate

In view of the new co-financiers and partners for the 3-year extended period, and an assessment of the risks by the partners as well as by UNDP, the project is proposed to be recategorized from C (no/low risk) to B (medium risk) as per the GCF safeguards standards. (This corresponds to the category of moderate risk as per the UNDP safeguards policy, and medium risk as per the GCF safeguards policy, as confirmed during the re-accreditation of UNDP). The co-financing changes cannot be viewed separately from the safeguards related changes, as they are interconnected and shall be approved together.

The Environmental and Social Safeguards Framework/Plan (ESMF/P – annex 3) will serve as a practical tool to manage the limited environmental and social impacts of proposed investments under output 4.1 and as a platform for consultations with stakeholders and potential project beneficiaries. Please refer to annex 2 for the most recent safeguards screening, which identified moderate risks related to asbestos and air pollution stemming from the EE retrofits in project Output 4.1; the ESMF/P was developed to primarily address those limited moderate risks and is based on that screening. These risks can be managed by measures that involve asbestos screening, the use of best-practice asbestos waste management guidelines, air pollution screening, and other standard measures for managing low risks that are stipulated in the ESMF/P (annex 3). The draft ESMF/P was also translated and disclosed on UNDP and/or other websites/in an accessible location as per the UNDP disclosure guidance and the GCF information disclosure policy in English and an official local language. (Please see annex 4 for disclosure details.)

F.4. ANY CHANGES IN FINANCIAL MANAGEMENT AND PROCUREMENT? Yes ☐ No ☒ If yes, please elaborate

N/A

G.1. ANY CHANGES TO THE RISK ASSESSMENT SUMMARY? Yes ☐ No ☒ If yes, please elaborate

As noted above, risks of the COVID-19 pandemic and associated disruptions to normal work, as well as risks of military conflict between Armenia and Azerbaijan, have materialized between 2020 and 2022. The risk of non-materialization of new co-finance sources is presented in G.2.

G.2. ANY CHANGES FOR RISK FACTORS AND MITIGATION MEASURES? Yes ☒ No ☐ If yes, please elaborate

Selected Risk Factor 1

Description	Risk category	Level of impact	Probability of risk occurring
Complications arising from the COVID-19 pandemic and associated restrictions	Technical and operationalTechnical and operational	High (>20% of project value)	Low

Mitigation Measure(s)

The project has adopted various measures to deal with COVID-19 and its effects on work, including increased use of remote meetings. The requested extension of the project time frame is itself a way of managing the realized risk of COVID-19 disruptions.

Selected Risk Factor 2

Description	Risk category	Level of impact	Probability of risk occurring
Escalated military hostilities with Azerbaijan	Technical and operational	High (>20% of project value)	Medium

Mitigation Measure(s)

The conflict has impacted the project in many ways. The most direct impact was the mobilization of construction workers for military service, causing significant delays in the ongoing works. The military escalation also affected the activity and priorities of government agencies, with national security and humanitarian priorities fully dominating the political agenda. Notably, demand among some local communities for State Subvention Programme funding for EE retrofits has slowed as these communities seek to use their limited subvention allotments for more urgent infrastructure repair made necessary by the military conflict.

The project seeks to minimize these risks by redoubling its efforts to highlight the benefits of building EE upgrades in terms of cost savings and comfort. It should be noted that many communities are not directly affected by infrastructure damage from military activity, which takes place in border regions.

The current situation with the blockage of the road between Armenia and Nagorno-Karabakh creates continuing uncertainty. Nevertheless, there are signs that the project will be able to proceed without major disruption. The Government does continue to show strong commitment to the project and to building retrofits, including a plan in the midterm state budget for 2023-25 to include allocations of up to $291 million for building renovation, part of which could be blended with project funds to support incremental EE upgrades.

Please refer also to annex 2 for UNDP environmental and social safeguards screening.

Selected Risk Factor 3

Description	Risk category	Level of impact	Probability of risk occurring
Non-materialization of co-financing	Financial	High (>20% of project value)	Low

Mitigation Measure(s)

The UNDP has engaged a number of partners to assemble a pipeline of projects, which would enable replacement of a pipeline from one partner (that does not materialize by/during a certain period) by pipeline of another partner. The project is designed on a principle of first-come-first-served and thanks to the expanded range of new partners/co-financiers proposed in this restructuring paper, the risk of co-finance materialization is perceived to be relatively low (unlike it was the case with a single co-financier in the original approved funding proposal.)

UNDP will submit to the GCF Secretariat, as part of the 5th, 6th and 7th disbursements the following:

For disbursement 5: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 8mln for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 5 will be applied.

For disbursement 6: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 12.3mln for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 6 will be applied.

For disbursement 7: letters from the co-financiers confirming availability of co-financing for a cumulative amount equal to minimum of USD 5.7mln for the implementation of Component 4 during the period for which the GCF proceeds related to disbursement 7 will be applied.

Selected Risk Factor 4

Description	Risk category	Level of impact	Probability of risk occurring
Impacts of foreign exchange rates fluctuations	Financial	Low (<5% of project value)	Low

Mitigation Measure(s)

The project will absorb any foreign exchange fluctuation related impacts, such as rising costs of retrofits and/or services.

** Please expand this sub-section when needed to address all potential material and relevant risks.*

H.1. REVISED LOGIC FRAMEWORK.

Please update the logic framework in accordance with the GCF's Performance Measurement Framework under the Results Management Framework.

H.1.1. Paradigm Shift Objectives and Impacts at the Fund level[26]							
Paradigm shift objectives							
Shift to low-emission sustainable development pathways	1. The project objective is to use an integrated suite of interventions to systematically de-carbonize the existing building stock to realize both energy savings and sustainable development benefits. 2. The project will create a favorable market environment and scalable business model for investment in energy efficiency retrofits, leading to sizeable energy savings and accompanying GHG emission reductions (directly, 1.118 million tCO2 over the 20-year lifetime of the investments, including additional indirect savings, a total of between 4.2- 4.4 tCO2eq). Original target as per FP is 1,388,332 tCO2/ 20 years, which was calculated using the GHG emission factor of 0.436 back in 2015-2016. If the original methodology and grid emission factor (0.436 as per the original FP) is considered, **there is no significant change to the projected impact (comparing to the approved funding proposal)** due to the newly identified financiers/pipeline of energy efficiency retrofit interventions which estimates/will be financed with the goal to reach this target. The below changes reflect adjustments in grid emission factor (0.390) and takes more conservative approach based on ex-post available data.						
Expected Result	**Indicator**	**Means of Verification (MoV)**	**Baseline**	**Target**		**Assumptions**	***Update***
				Mid-term (if applicable)	Final		
Fund-level impacts							
M3.0 Reduced emissions from buildings, cities, industries and appliances	GCF core indicator: tonnes of carbon dioxide equivalent (t CO2eq) reduced or avoided as a	EMIS system to be set up in Component 1 of the Project	0	100 kt CO2e / year	Direct 1.118 Mt CO2e over 20 years	Housing units and buildings are more resource- efficient and comfortable	***No changes if original FP methodology for GHG calculations is followed. (The***

[26] Information on the Fund's expected results and indicators can be found in its Performance Measurement Frameworks available at the following link (Please note that some indicators are under refinement): http://www.gcfund.org/fileadmin/00_customer/documents/Operations/5.3_Initial_PMF.pdf

	result of Fund-funded projects/programmes					(and yet more affordable) at both high and low temperatures and thus subject to reduced long-term climate impacts (Please see annex 8)	***here presented reflects more conservative estimates via using of the calculational and Ex-Post approaches.)***
M3.0 Reduced emissions from buildings, cities, industries and appliances	GCF core indicator: Cost per t CO2eq Defined as total investment cost / expected lifetime emission reductions	Project monitoring data on costs plus data from the indicator on tonnes of CO2eq reduced	0	-	12.6 USD / tCO2e for GCF		***See above.***
M3.0 Reduced emissions from buildings, cities, industries and appliances	GCF core indicator: Volume of finance leveraged by the project and as a result of the Fund's financing, disaggregated by public and private sources	Project reporting	0		US$ 148,708,825 – loans (out of which US$ 19,720,320 for Energy Efficiency measures) US$ 130,425,378 -State/public funding (out of which US$ 57,341,537 for Energy Efficiency measures)		***Proposed revision based on 2023 data.*** ***Financial figures presented in the co-financing letters received from Project partners (for APR annual exercise) usually are higher as they reflect the full costs of the buildings'***

							retrofits planned.[27] ***The co-financing for EE measures to be monitored against the target and reported on by UNDP (for APR annual exercise).***

[27] The energy efficiency related costs usually make up 15-35% of the committed amounts, depending on buildings' size, retrofit types, measures planned etc. As for MAB retrofits as well as EDB financed public buildings EE retrofits – EE associated costs make up 100% of the committed figures.

H.1.2. Outcomes, Outputs, Activities and Inputs at Project/Programme level							
Expected Result	**Indicator**	**Means of Verification (MoV)**	**Baseline**	**Target**		**Assumptions**	***Status update***
				Mid-term (if applicable)	Final		
Project/programme Outcomes	**Outcomes that contribute to Fund-level impacts**						
M5.0 Strengthened institutional and regulatory systemsM5.0 Strengthened institutional and regulatory systems	5.1 Institutional and regulatory systems that improve incentives for low-emission planning and development and their effective implementation (outcome indicator for Component 2)	Score on World Bank RISE indicators for building sector	34	64	91	Strengthened institutional and regulatory systems lead to practical change and do not remain on paper	***No changes***
M7.0 Lower energy intensity of buildings, cities, industries and appliancesM7.0 Lower energy intensity of buildings, cities, industries and appliances	7.1 Energy intensity / improved efficiency of buildings, cities, industries and	Reported data from project monitoring component	**Residential buildings: 185 kWh / m2 per an** **Public buildings: 200 kWh / m2 per an**	-	Reduced by 50%	Rebound effect due to lower energy intensity is limited	***This target was based at the project design stage on the limited statistical data available at the period of the Project design. However, by the time of refocus analysis in 2020 more enhanced statistics was available and thus it was decided to reflect updated baseline data in here to be closer to reality.***

Robust MRV for the building sector established (Component 1 – Establishment of building sector MRV and knowledge management)	Establishment of a web-based, publicly-accessible MRV database	Project reporting	No MRV in place	Website establish-ed and fully web-accessible	5,000 website hits per year	MRV systems continue producing data after project end	***No changes***
National, sub-national and local authorities adopt and implement an enabling policy framework for EE retrofits (Component 2 – Policy de-risking)	See indicator 5.1 above						***No changes***
Access to affordable capital for EE retrofits provided (Component 3 – Financial de-risking)	Value of loans for building renovation provided	Reported data from project monitoring component	0	US$ 22m	US$ 100m	The Government continues to bring energy prices in line with market prices Level of skills among local professionals is maintained at a level that can support market growth Lenders make use of learning	***No changes***

						opportunities offered by the financial mechanisms supported in this project	
Affordability of EE retrofits for most vulnerable households ensured through targeted financial incentives to building / apartment owners / ESCOs (Component 4 – Financial incentives)	Number of vulnerable beneficiaries (lowest quintile of household income) with improved building EE	Applications submitted for the financial incentives scheme	0	15,000	50,000	Targeted financial incentives are aligned with the capital provided for EE retrofits, effectively leading to the implementation of retrofits	***No changes***
Project/programme outputs	**Outputs that contribute to outcomes**						
1.1 MRV systems for the buildings sector in Armenia established	Development and coverage of MRV system and database	Regular project reporting	N/A	Developed & in use for renovated buildings: full coverage of buildings retrofitted in this project	Developed & in use for renovated buildings: full coverage of buildings retrofitted in this project	Building occupants cooperate with the implementation of MRV systems	***No changes***

1.2 Knowledge management and MRV information disseminated	Number of beneficiaries with access to knowledge about energy use in buildings, opportunities and financing for EE	Regular project reporting	N/A	Number of benefi-ciaries: 50,000	Number of benefi-ciaries: 250,000	Learning opportunities offered by this project lead to sustained lending for EE investments	***No changes***
2.1 Public instruments for the promotion of investment in EE selected	UNDP's framework to support policy-makers in selecting public instruments to promote energy efficiency investment in developing countries used, adapted as necessary	Report on implement ation of the framework	Frame- work not used for EE in Armenia	Number of public instruments selected: 3	Number of public instru-ments selected: 3	Policymakers follow through on implementation of the selected instruments	***No changes***
2.2 Support provided to on-going legal reform in the field of EE	Binding legislation on building codes and adequate secondary legislation adopted.	National legislation	Level 3. Policies proposed and consul-tation ongoing.	Level 4. Strong policy adopted	Level 5. Strong policy adopted and institu-tional capacity streng-thened	UNDP's working relationship with the Government is effectively employed to maintain the momentum for legal reform	***No changes***

2.3 Support provided for the creation of an enabling policy framework for EE retrofits in multi-owner residential buildings	Adequate secondary legislation providing a clear and effective set of functional models and a standard set of rules for multi-owner building management bodies to undertake EE retrofits developed, introduced and enforced	National legislation	Secondary legislation lacking	Level 6. Sub- sector plans reflect key policy targets	Level 7. Regula tory frame-work developed	UNDP's working relationship with the Government is effectively employed to maintain the momentum for creation of an enabling policy framework	***No changes***
2.4 Support provided to building owners / managers / owner associations / ESCOs on legal matters related to EE retrofit projects	Business models for repayment of EE investments implemented	Regular project reporting	Level 1. No business models for repayment of EE invest-ments in buildings in place	Level 3. Strong proposal defined with buy-in from stakeholder s confirmed	Level 5. Financial mecha-nism in operation with evidence of stability	Gradual introduction of performance-based contracts and risk transfer to ESCOs, combined with capacity building, lead to the development of an ESCO market	***No changes***
2.5 Exit strategy measures implemented	Additional exit strategy measures designed and implemented	Regular project reporting	N/A	Additional exit strategy measures designed	Additional exit strategy measures implement ed	Exit strategy succeeds in maintaining the momentum created by the project and leads	***No changes***

						to local stakeholders continuing to further develop the market	
3.1 Technical assistance provided to banks and other financial institutions	Capacity of banks to develop and market products for energy efficiency retrofits in individual houses	Survey of bank employees	Banks do not have the capacity to develop and market products for energy efficiency retrofits in individual houses	2 Armenian banks have the capacity to develop and market products for energy efficiency retrofits in individual houses	4 Armenian banks have the capacity to develop and market product s for energy efficiency retrofits in individual houses	Banks are interested and participate in capacity building to enable them to deliver EE projects in individual houses	***No changes***
3.2 Technical assistance for HOA market facilitation provided to banks	Capacity of banks to develop and market products for energy	Survey of bank employees	Banks do not have the capacity to develop and market products for	2 Armenian banks have the capacity to develop and market	4 Armenian banks have the capacity to develop	Banks are interested and participate in capacity building to enable them to deliver EE	***No changes***

	efficiency retrofits in multi-owner residential buildings		energy efficiency retrofits in multi- owner residential buildings	products for energy efficiency retrofits in multi-owner residential buildings	and market product s for energy efficiency retrofits in multi-owner residential building s	projects in multi-owner residential buildings	
3.3 Technical assistance provided to local government to develop EE retrofit projects for publicly-owned buildings	Percentage of local government employees in Armenia who believe they have the capacity to develop EE retrofit projects for publicly-owned buildings	Survey of local governmen t employees	Local govern- ment does not have the capacity to develop EE retrofit projects for publicly-owned buildings	50% of local govern-ment emplo- yees believe local govern-ment has the capacity to develop EE retrofit projects for publicly-owned buildings	80% of local govern-ment employ-ees believe local govern-ment has the capacity to develop EE retrofit projects for publicly-owned buildings	Local government is interested and participates in capacity building to enable it to deliver EE projects in public buildings	***No changes***
3.4 Access to affordable capital for EE retrofits provided	Amount and number of loans for building renovation provided	Reported data from project monitoring component	No lending provided	US$ 20 million	US$ 80 million	Economic situation continues to improve	***This figure includes the loan from EIB phase 1 (~USD 14.8 mln), as well as other loans committed by new co-financiers.***

3.5 Marketing platform created	Marketing materials developed and platform created	Marketing materials, project reporting	No marketing materials exist	Marketing materials created and disseminated to at least 5,000 stakeholders	Marketing platform created and disseminated to at least 25,000 stakeholders	Marketing campaign successfully raises awareness of the opportunities offered by building EE retrofits	***No changes***
4.1 Targeted financial incentives provided to vulnerable groups to help address the affordability gap	Financial mechanism to provide targeted financial incentives in place and incentives provided	Reported data from project monitoring component	No incentives in place	Incentives provided to 15,000 beneficiaries	Incentives provided to 50,000 beneficiaries	Sufficient uptake of the financial incentive among the target market of vulnerable homeowners	***No changes.***
	Number of public buildings that receive a financial incentive for energy efficient retrofits, including area (m2)			-	103 Public buildings - technical package 1 (full retrofits)		***Commitments received from new co-financiers of the project (ADB, EDB) as well as Government's new commitments for the years 2023-2025 show large number of public buildings planned for the deep EE retrofits. (Please see annex 5)*** ***The number of buildings for final target increased from 20 (as per FP) to 103.***
	Number of public buildings that receive a			-	202 Public buildings - technical package 2		***Changes are based on the Refocus Analysis, (prepared and provided to the GCF in 2020), as well as commitments from the Project partners and envisaged cooperations.***

	financial incentive for energy efficient retrofits, including area (m2)				(simple retrofits)		***The target has slightly increased from 200 to 202.***
	Number of residential buildings that receive a financial incentive for energy efficient retrofits, including area (m2)			-	10 MABS not eligible for state subsidy		***The target has decreased from 40 to 10. This is linked to partnership with Municipality of Yerevan and their commitment to co-finance EE retrofits in 10 MABs. (Please see annex 5)***
	Number of residential buildings that receive a financial incentive for energy efficient retrofits, including area (m2)			-	188 MABs under state subsidy programme		***(Please see annex 5)*** ***The number decreased from 319 to 188.*** ***Decrease is linked to overall dynamic of MAB retrofits in the frames of State Subvention Programme for the last 2 years: Priorities have slightly been changed in local communities after COVID and war, showing somewhat decrease in EE retrofits of MABs***
	Number of single-familty houses that receive a financial incentive for energy efficient			-	200 Single-family individual buildings		***The new target decreased from 6,000 to 200 (and was agreed in 2020 when* Refocus *Analysis was submitted to GCF).***

	retrofits, including area (m2)						
Activities	**Description**		**Inputs**		**Description**		***Status updates***
1.1.1 MRV framework	Development of the MRV framework, including guidelines and monitoring methodologies for the various categories of buildings		International consultants, Local consultants, PMU staff time, Funds		Hiring of consultants to develop MRV framework in conjunction with the project team		***No changes***
1.1.2 EMIS implementation	Support to full implementation of building EMIS in targeted buildings for demonstration and capacity building purposes		Software International consultants, Local consultants, PMU staff time, Funds		Following competitive tender and based on detailed technical specifications, Ministry of Nature Protection financially supported for the purchase of EMIS systems		***No changes***
1.2.1 Stakeholder engagement	Identifying appropriate formats for reaching the relevant stakeholders		International consultants, Local consultants, PMU staff time, Funds		Specialist communications consultants engaged to develop communications strategy		***No changes***
1.2.2 Website	Establishment of a website that will provide information and a platform for communication between the different stakeholders		Web developer, Web hosting		Competitive tender for Web design and implementation		***No changes***
1.2.3 Formats for dissemination	Formats for information dissemination will be developed based on their likely effectiveness for raising awareness, facilitating information access and providing		International consultants, Local consultants, PMU staff time, Funds		Specialist communications consultants assist with the development of informative and accessible literature and other media communications tailored to specific user-groups		***No changes***

	actionable guidance and support to the sector			
1.2.4 Information provision	Provision of information to consumers	Printing and publication costs, international consultants, Local consultants, PMU staff time, Funds	Procurement of design and print services, and development of accessible information products	***No changes***
2.1.1 Public instrument selection	The project will make use of UNDP's framework to support policymakers in selecting public instruments to promote energy efficiency investment in developing countries	Workshops (2) and meetings (15), International consultants, Local consultants, PMU staff time, Funds	Specialist DREI consultants and UNDP staff to assist in instrument selection	***No changes***
2.2.1 Technical specialist support to authorities to adopt and implement an enabling policy framework	Support to national, sub-national and local authorities to adopt and implement an enabling policy framework for EE retrofits.	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to assist in preparation of policies and regulations defining the terms of EE retrofits	***No changes***
2.2.2 Introduction of legislation	Support to the gradual introduction of binding legislation on energy auditing, energy passports / certificates and labelling for existing buildings	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to assist in design and implementation of legislation, and the design and implementation of auditing, passports and labelling	***No changes***
2.2.3 Public building legislation	Support to the introduction of legislation specific to public buildings	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to assist in design and implementation of legislation	***No changes***

2.3.1 Technical support from experts to policy- makers in developing policy related to HOA legal status, payment enforcement and management	Support to policy-makers in developing policy relating to HOA legal status, payment enforcement, professional management and consensus levels	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to advise and develop evidence base for policymakers for development of HOA policy	***No changes***
2.4.1 Legal support to management of multi- owner buildings related to energy efficiency retrofits	Provide support on legal matters related to EE retrofit projects for multi-owner buildings	International consultants, Local consultants, PMU staff time, Funds	Specialist legal support hired on a retainer basis and made available to retrofit projects as and when required	***No changes***
2.4.2 ESCOs	Provide support to establishing ESCOs	International consultants, Local consultants, PMU staff time, Funds	Specialist technical and legal consultants hired to assist with support to ESCO establishment	***No changes***
2.5.1 Exit strategy	Development and implementation of exit strategy	International consultants, Local consultants, PMU staff time, Funds	Hiring of consultants to advise on design and implementation of post-project impact sustainability measures	***No changes***
3.1.1 Technical support provided to banks to develop and market energy efficiency products to	Provide support to banks to develop and market products for energy efficiency in individual residences	International consultants, Local consultants, PMU staff time, Funds	Technical and financial consultants hired to assist with support to local banks	***No changes***

individual residences				
3.2.1 Technical support provided to banks to develop and market energy efficiency products to multi-owner building management (HOAs)	Support to development of bank products for HOAs	International consultants, Local consultants, PMU staff time, Funds	Technical and financial consultants hired to assist with support to local banks	***No changes***
3.3.1 Publicly-owned buildings	Support to the process of identification, development and aggregation of technically and financially feasible EE retrofit projects in publicly-owned buildings	International consultants, Local consultants, PMU staff time, Funds	Specialist consultants hired to assist with development of screening criteria and aggregation methodologies for EE retrofit projects in public buildings	***No changes***
3.4.1 Technical structure for financial instruments	Establishment and maintenance of the technical structure for the financial de-risking instruments offered	Concessional loans: US$ 86.25 million	Mode of operation of the financial de-risking instruments designed, implemented and documented	***No changes***
3.4.2 Verification	Verification of funded investments	International consultants, Local consultants, PMU staff time, Funds	MRV system designed, implemented and documented	***No changes***
3.5.1 Marketing support	Provide marketing support to banks	Printing and publication costs, international consultants, Local consultants, PMU staff time, Funds	Specialist communications consultants assist with the development of literature and other media communications tailored to specific customer segments	***No changes***

4.1.1 Targeted incentives	Targeted financial incentives provided to building / apartment owners, or the ESCOs serving these clients	Incentives: US$ 14 million	Mode of operation of the financial incentives designed, implemented and funds transferred	***No changes***

I. UPDATED SUPPORTING DOCUMENTS FOR RESTRUCTURING PAPER

☒ NDA No-objection Letter (annex 1)

☒ Environmental and Social Risk Screening (annex 2)

☒ Environmental and Social Management Plan/Framework (annex 3)

☒ Disclosure Form (ESMF/P) (annex 4)

☒ Proposed revisions of the Schedule 2 of the FAA and Review of co-financiers/partners (annex 5)

☒ Decree of the Government of Armenia # 2111-N from 29 December, 2022: On Approving the Measures to Ensure Implementation of the 2023 Annual Budget of the Republic of Armenia (annex 6)

☒ Operational Manuals and Technical Reviews as part of the Refocus Analysis for the Armenia (FP010) cleared by GCF Secretariat (annex 7) *, **, ***, ****, *****.

☒ Summary table for the project impacts overview (annex 8)

☒ GHG emission calculations