

United Nations Development Programme**Country: ARMENIA****INITIATION PLAN**

Project Title: **Strengthened Community Resilience through Energy Efficiency and Low Emission Development**

Expected UNSDCF/CP Outcome(s): Outcome 5. Ecosystems are managed sustainably and people benefit from participatory and resilient development and climate-smart solutions

Expected CPD Output(s): 2.2 Low-emission measures, renewables and energy efficiency advanced and scaled

Initiation Phase Timeline: Start date 15 January 2022; End date: before the full-fledged Project Document is appraised and approved 30 June 2022

Key Counterparts: Ministry of Territorial Administration and Infrastructure of the Republic of Armenia, Alaverdi Community of Lori marz,

Brief Description

The project will provide foundations for sustainability and replication for a “green recovery”, that in turn will boost the security, reliability and affordability of energy in Armenia. Green investments have the potential to accrue social and environmental dividends while helping to generate financial benefits and contributing to economic recovery. Energy efficient (EE) and renewable energy (RE) investments in buildings and infrastructure in communities can help reduce energy bills and thus free up financial resources for alternative and immediate needs – not least in relation to vulnerable populations. This can be done while creating “green” jobs, preventing deforestation and reducing the dependence on imported fossil fuels.

Programme Period:	2021 - 2025
Initiation Phase Period:	Jan 15, 2022 – June 30, 2022
Execution Modality:	DIM
Atlas Project ID:	00140158
Atlas Output ID:	00129453
Gender Marker:	GEN 2

Total resources required	USD 54,000
Total allocated resources:	SEK 6,000,000
Cash resources:	
Sida:	USD 54,000
Parallel funding:	
• UNDP (in-kind):	USD 6,000
• Government in-kind:	USD 1,000

Agreed by UNDP:

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Title: UNDP Deputy Resident Representative

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Date:

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I. INTRODUCTION

The project seeks to enhance the active role of communities in the implementation of Armenia’s commitments under the Paris Agreement, stated in its updated Nationally Determined Contributions (NDC) approved in 2021.

The 40% greenhouse gas emissions reduction target, set for 2030 by the Government, is ambitious. Achieving it requires the active involvement of non-state actors in the implementation of low carbon development actions, which combine high social impact and scalable potential. This project will identify and progress opportunities to advance environmental objectives through enhancing the economic and social resilience of urban communities in Armenia. The proposed pilot of a model for the planning, implementation, partnering and robust monitoring and reporting on low carbon development outcomes, will be designed to be replicable in other communities of the country. The ultimate objective of the project is to deliver benefits for the most vulnerable segments of the population and disadvantaged communities, thereby paving the way for a just transition to a green economy in Armenia involving non-state actors, including communities.

The inception phase of the project will provide foundations for sustainability and replication for a “green recovery”, that in turn will boost the security, reliability and affordability of energy in Armenia. Green investments have the potential to accrue social and environmental dividends while helping to generate financial benefits and contributing to economic recovery. Energy efficient (EE) and renewable energy (RE) investments in buildings and infrastructure in communities can help reduce energy bills and thus free up financial resources for alternative and immediate needs – not least in relation to vulnerable populations. This can be done while creating “green” jobs, preventing deforestation and reducing the dependence on imported fossil fuels.

The project will apply a multi-stakeholder, gender-responsive, participatory and pilot-oriented approach through mainstreaming the market systems development approach throughout the project. During the implementation phase facilitative activities will be implemented, across a range of outputs, which will contribute to systemic changes. At these stage interventions are expected to be implemented in the following areas i) green skills, ii) finance, iii) information and the iv) provision of green solutions, involving market actors. These interventions will aim to catalyze sustainable and widespread “green” practices change in the country.

To ensure the change is replicated and mainstreamed across the country, the Project will closely cooperate with the RA Government, including the Ministry of Territorial Administration and Infrastructure, Ministry of Environment, regional (marz) and local administrations (community). As part of this effort a Project Advisory Board will be established with a high-level representation of stakeholders from the ministries, regional/local government bodies and NGOs, to provide strategic orientation to the Project.

Development Challenge and Strategy

The project is designed in the context of agreed strategic priorities for supporting development outcomes in Armenia. It is also aligned to Swedish international development cooperation priorities, as articulated in *Sweden’s global development cooperation in the areas of environmental sustainability, sustainable climate and oceans, and sustainable use of natural resources* and to the signature solutions in the United Nations Development Program Strategic Plan for 2022- 2025¹.

The project aims to contribute to the goals of i) preventing climate change and reducing greenhouse gases and air pollutants, ii) reducing the vulnerability for people living poverty and iii) progressing

¹ <https://www.undp.org/publications/undp-strategic-plan-2022-2025>

sustainable energy systems based on renewable energy², with a view for the new practices introduced to be scaled up in additional communities in Armenia.

II. PROJECT PURPOSE AND EXPECTED OUTPUTS

The main purpose of the Initiation Plan is to support Local level governments in effective management of municipal resources for socially oriented and gender responsible actions for improving energy management ensuring green recovery. The communities will benefit from establishing energy management systems and well-designed energy efficiency and renewable energy installations. The project will also priorities to creation of employment opportunities and foster business recovery and green growth in the post-COVID context in line with UN Sustainable Development Cooperation Framework for Armenia.

INCEPTION PHASE

OUPUT: Undertaking the stocktaking and full-size project detailed workplan development

The project envisages facilitating the development of the market system for EE and RE solutions, to build relationships, incentives and technical capability – to introduce sustainable and new practices among market system actors. The existence, and current performance, of the required functions and rules for a self-sustaining and innovating market system will be established during the inception phase.

Project kick off and the establishment of the Advisory Board

We will mobilize staff to the project as quickly as possible and revisit the work plan and risk register before progressing to the implementation of activities. The UNDP team will then conduct a visit to the selected community, to meet with public authorities, civil society groups and key companies, individually. A project kick-off meeting will then be held, to introduce the initiative, the approach and the activities to be implemented. The Project Advisory Board, comprising some of the stakeholders, will then be established, with a view to having the first meeting in the first month of the Project. The composition and operations of the Advisory Board is further detailed in Section 9.

Multi-dimensional poverty analyses workshops

To further refine our approach and ensure the orientation of the project towards the target group, we will conduct 3 2-hour workshops to investigate the existence and causes of multi-dimensional poverty in Alaverdi. One of these workshops will just comprise of women participants. The workshops will be structured to follow the MDPA ‘light’ approach, and will likely focus on the constraints of resources, power and voice and opportunity and choice. It may be that the horizontal segmentation, by gender, age or some other split, supports the understanding of the causes and existence of multi-dimensional poverty.

Importantly, focussing on the situation of the target group, will further ensure that the new practices introduced by the project have relevance to our target group. The results of the workshop will be reported as an interim deliverable, and as an Annex to the inception phase deliverables.

²<https://www.government.se/49ae5f/contentassets/8d99ab613d4d476794495d6e4859c3aa/strategy-for-swedens-global-development-cooperation-in-the-areas-of-environmental-sustainability-sustainable-climate-and-oceans-and-sustainable-use-of-natural-resources-20182022.pdf>

Output: Report on multi-dimensional poverty in Alaverdi.

Implementing the market systems analysis and core transaction market

Due to thin and nascent markets and importance for defining the full potential for private actors' involvement an international expert in markets systems development will be hired to conduct the analysis and detailed design of interventions to be implemented on second stage of the project.

This activity will map the functions and rules required for the development of sustainable market systems. It will engage with possible providers of these functions and rules, to identify what new practices may be most relevant, and what may constrain their development and provision. A targeted survey will be conducted among the three tiers of direct beneficiaries (the target group, municipalities and companies) to reveal their perception of the progress inhibiting factors in the municipal energy sector. Findings on each of the below indicated roles with their interconnections will serve to tailor the proposed interventions to the local needs and to properly take into account the local mode of action. The survey's finding will identify the needs of the three groups in relation to:

- Market Supply side; Suppliers and installers
- Capacities and promotion of green skills; Skills providers
- Financing; Low-interest loans, blend in grant co-financing
- Legal-regulatory framework; Government regulating and facilitating

This activity will be completed once a verified short list of functions and rules has been identified, for the opening portfolio of interventions. At this stage, this is expected to be finance, skills and the market supply side (as a direct intervention in the core transaction market to stimulate the market system).

Output: Interim report of International Expert on Market systems analyses and identified actions for market systems development in Alaverdi and other secondary towns as applicable.

Multi-dimensional poverty analysis

As mentioned in section 3, the introduction of energy efficiency solutions and renewables incur **sunk costs** that are currently not affordable nor accessible to households and public authorities, such as multiapartment buildings occupants and municipalities. Therefore, demand is mostly suppressed. Demand can be stimulated if suitable solutions can be identified and proven, and if the performance of functions and rules is adequate.

This activity will build on the multi-dimensional poverty analysis. It will focus on identifying feasible energy efficient and renewable energy solutions for the target group in the core transaction market. The core transaction market could be split, to identify the needs and capability of MAB dwellers separately. This activity will also start to identify the willingness to take and ability to pay for critical functions (most importantly in skills and finance). This activity will be implemented through interviewers with a diverse range of MAB dwellers, and relevant authorities. Concurrently we will also look to identify the lessons from previous efforts to introduce energy efficient and renewable energy solutions, in secondary cities.

The outcomes of market systems development analysis will be tested with local stakeholders through two meetings, as well as with the Project Advisory Board. The intervention documentation will be designed so as to demonstrate relevance to higher level results (see the Theory of Change). Importantly, the intervention design process will sit within an intervention management process, to be considered during the inception period and detailed in the final report.

Output: Based on the MDPA and market systems development analyses, a short list of interventions will be identified and designed for the first 1 year of the project.

Establishing partnership framework

The effective partnerships with all the partners and stakeholders build transparency into relationships, anchor expectation and build confidence that project funds will be expended efficiently and effectively during the implementation phase.

The relevant Ministries were consulted on initial phase of project design and their role will be ensured as members of Advisory Board of the Project, as well as head of selected municipality.

The Letter of Agreement (LoA) with the Municipality will be signed, and is likely to include a 10% co-financing commitment, the recruitment of an Energy Manager and the establishing energy management system, the creation of a Task Force, and the prioritisation of inclusion of women and vulnerable groups in all actions under the project.

Other sources for co-financing will be explored e.g., state subvention programme, private and financial sectors, environmental protection fees paid to affected communities.

Strong sector cooperation will contribute to the systemic change, hence communication with business agencies will be conducted to incentivise greener business practices. Where required, cooperation agreements will also be signed with relevant businesses, or the representative associations.

Environmental impact assessment

An environmental impact assessment (EIA) will be mobilized to provide an external assessment of the proposed approach and the interventions. This will follow the simplified approach to EIA. The following questions will be asked under the EIA.

- Does the intervention offer opportunities for positive contributions to an environmentally sustainable development? What are those opportunities? Which of them are most relevant to address? Has the intervention been adjusted to enhance those opportunities?
- Does the intervention have any negative impacts on the environment, including the climate, or increase vulnerability to disasters? Which are the potential negative impacts? Which of those are most relevant to address? Has the intervention been designed to avoid, or reduce and manage, those impacts?
- What are the current and projected impacts of climate change and other environmental degradation in the area where the program is operating? Are they likely to impact the sustainability of the contribution? How can such risks be avoided, or reduced and managed?
- Are environmental concerns and opportunities addressed in management plans for the intervention's implementation, monitoring and evaluation?
- Does UNDP have capacity for environmental management, in terms of staff capacity, policies, guidelines, environmental management system? Are there opportunities to improve the capacity?

The renewable energy and energy efficiency interventions planned under the project will be assessed from the point of their **positive impact** on climate mitigation, based on assessing the baseline energy consumption (electricity, natural gas or wood) as well as social and economic co-benefits for target groups. The impact of the energy efficiency or renewable energy installations will be assessed based on country specific conversion factors for fossil fuel used and avoided emissions will be monitored and assessed. The UNDP has in house expertise for undertaking energy audits based on design documentation and baseline, as well as ex-post monitoring of energy consumption.

The perceived **negative impact**, from reconstruction/refurbishment/installation works, will be assessed considering the national legislation and mainly will be linked to handling and disposal of

the dismantled construction waste and PV panels after its lifespan end. The site-specific EIA assessment and recommendations on waste management will be reflected in the management plans. Considering the limited knowledge and capacities of construction organizations on environmental management and weak supervision on the requirements for environmental management by inspection agency, the project will develop requirements and consider that as a part of contract negotiations with the construction company to be hired by community.

Inception phase report

The structure to the inception phase report will be discussed and agreed with Sida during the inception period. It will include information on how many vulnerable households in multi-apartment buildings will participate in the project. An initial outline of the report is proposed to be:

1. Introduction;
2. Project rationale and alignment;
3. A synthesis of multi-dimensional poverty in Alaverdi;
4. A synthesis of the market systems analysis;
5. The opening portfolio;
6. The results framework and results measurement methodology;
7. Our pathway to replication and reaching scale;
8. Project management and resourcing;
9. Annexes
 - 1: Workplan;
 - 2: Budget;
 - 3: Risks and challenges;
 - 4: The market systems analysis; and
 - 5: Multi-dimensional poverty analysis.

Key elements of the Inception Phase Report will be presented and agreed with the Project Advisory Board. The draft project document was developed and agreed with Sida, see [Annex A](#).

III. MANAGEMENT ARRANGEMENTS

The project will be managed by UNDP under the Direct Implementation Modality (DIM) guided by UNDP's standard programme and operational policy and guidelines. On day-to-day basis, the project will be led by a Project Manager, supported by an Admin & Finance Associate (part time), and a Project Assistant, responsible also for communication. Besides, a team of experts will support the implementation of the project in the field.

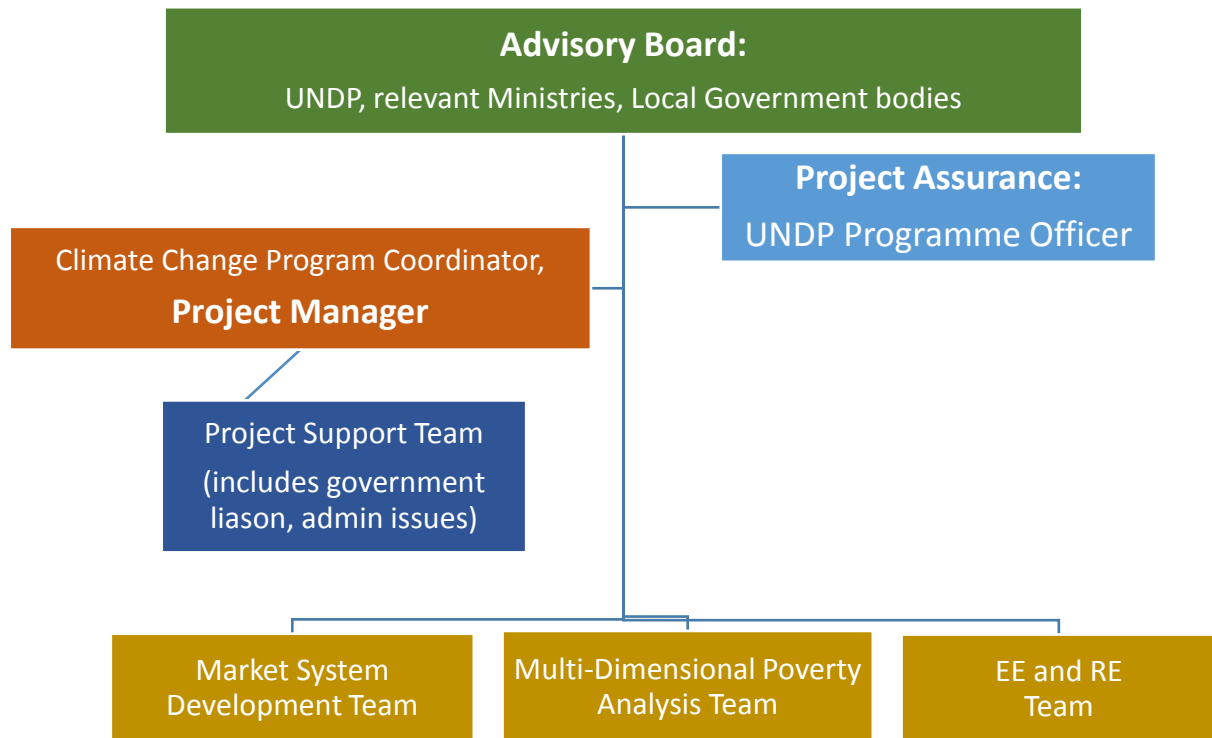
Project Manager: has the authority to run the project on a day-to-day basis on behalf of UNDP. The Project Manager will report to the Climate Environment and Resilience (CER) Portfolio Manager and will work closely with UNDP's Climate Change Programme Coordinator.

Quality assurance will be undertaken by UNDP's CER Portfolio Manager by carrying out objective and independent project oversight and monitoring functions.

A Project Advisory Board (Board) will be established to guide the management and implementation of the Initiation Plan and strategic orientation to the Project. The Board will be chaired by UNDP DRR and a high-level representative from Ministry of Territorial Administration and Infrastructure; it will include the CER Portfolio Manager. The Board will hold semi-annual meetings with the participation of the donor to: 1) review progress in the implementation of the project including inter alia the results achieved and lessons-learned and 2) discuss strategic direction and adjustments for the remainder of the activity period. UNDP shall consult with donor on timing of such a meeting and make the documentation for the meeting available two weeks in advance of

the meeting. The Board decisions will be made in accordance with standards that shall ensure management for development results, fairness, integrity, transparency and effectiveness.

UNDP will work closely with local community(-ies) to plan, implement and monitor the field implementation and coordination. UNDP will establish formal agreements with community administration, civil society organizations, and private sector actors for implementation. Formal partnership instruments such as responsible party agreements, procurement contracts, or letters of agreement will be established as appropriate with relevant organizations for the timely accomplishment of the various activities included in this proposal.



IV. MONITORING

Tracking of project funds, monitoring of progress and reporting will follow UNDP standard rules and procedures. Project-level monitoring and evaluation will be undertaken in compliance with the [UNDP POPP](#) and the [UNDP Evaluation Policy](#). While these UNDP requirements are not outlined in this project document, the UNDP Country Office will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high quality standards.

The Project Manager will hold regular team meetings, where progress will be reported against the work plan. Sida's representatives would be welcome to participate in any of these meetings, on request. These meetings will also allow for the risk registry to be updated.

Experts and consultants: To ensure the relevant expertise, the project will hire:

- (1) National consultants on municipal planning and social services. Their work will contribute to multi-dimensional poverty analysis, ensuring correct application of the envisaged methodologies.
- (2) The energy systems engineer will be responsible for planning and design of energy efficiency and renewable energy component, including also support and trainings for energy management system establishment in community.

(3) The private sector involvement market systems development expert will be complemented by an international expert and will be responsible for identification of private sector involvement schemes and partnership building.

Short term experts will be hired to perform a simplified assessment of the project's environmental impact; communication policy of the project; stakeholder engagement, etc.

In order to ensure the smooth start-up and successful implementation of its activities, the project will use the knowledge, expertise, and capacities that have been accumulated by the UNDP Climate Change Programme.

Inception Phase Report planned to be finalized in 5-month period after project start will include results of detailed stocktaking and consultations with national and local administrations, as well key partners and civil groups in the selected community. The project implementation formal arrangements, detailed workplan including cost estimates of energy efficiency and renewable energy interventions will be described in the Report and presented for consent to the Board.

V. WORK PLAN

The workplan presented covers the Inception phase planned for 5 months³

Output Indicators	PLANNED ACTIVITIES	Resp. Party	Atlas Fund ID	Donor Name/ Code	Atlas Budgetary Account Code	ATLAS Budget Account Description	Total (USD)
OUTCOME: Support to Community Resilience through Low Emission Development							
OUPUT: Undertaking the stocktaking and full-size project detailed workplan development							
1.Indicator: Inception phase report developed 2.Indicator: Full size project document developed Indicator 3: Project Advisory Board held	<u>COMPONENT 1:</u> Undertaking the stocktaking and full-size project detailed workplan development 1.1. Energy efficiency and renewable energy sites selected, and initial cost of installations assessed. 1.2. Multi-Dimensional Poverty analysis. 1.3. Market System Development analysis. 1.4. Public perception survey on functions and rules (outsourced to a Company). 1.5. Environmental impact assessment. 1.6. Inception phase management.	MoE	30000	SIDA/00555			
					71200	International Consultants	10,000.00
					71300	Local Consultants	15,000.00
					71400	Contractual services - Individuals	2,000.00
					71600	Travel	4,000.00
					72100	Contractual services - Companies	10,000.00
					72400	Communication & Audio-Visual Equipment	1,500.00
					72500	Supplies	500.00
					72800	Information Technology Equipment	0.00
					73400	Rental and Maintenance of other Equipment	600.00
					74100	Professional Services	0.00
					74200	Audio Visual & Printing Production Costs	3,400.00
					74500	Miscellaneous Expenses (GMS 8%)	4,000.00
75700	Training, Workshop and Conferences	3,000.00					
					Total Component 1	54,000.00	
					PROJECT TOTAL	54,000.00	

³ The actual amount depends on the details of the respective ToRs and will be commensurate with the UNDP benchmark rates for national and international expertise. The Inception phase budget is included in the Total Budget on Page 27.

VI. ANNEX A**Project Document***(to be finalised based on inception phase assessments and agreed cooperation arrangements)*

Country	Armenia
Project title	Support to community resilience through low emission development
Project period	35 months (including 5 months for the Inception Phase) Start Date: 01 January 2022; End Date: 31 December 2023
Budget	Total: US\$ 1,090,962
Project number	ID: 00140158
Implementer	UNDP Armenia Country Office
Proposed technical approach	Promotion of energy efficiency and renewable energy solutions for market systems development to address and bolster against multi-dimensional poverty
Proposed project partners (implementation phase)	Alaverdi pilot community and other communities if applicable, Ministry of Territorial Development and Infrastructure, Ministry of Environment, community based civil society organisations representing women and youth, private sector actors and their associations
Proposed target group in the core transaction market	Households that experience or are vulnerable to multi-dimensional poverty, vulnerable users of public buildings including women and children (e.g., schools, kindergartens)

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1. EXECUTIVE SUMMARY

The project seeks to enhance the active role of communities in the implementation of Armenia's commitments under the Paris Agreement, stated in its updated Nationally Determined Contributions (NDC) approved in 2021.

The 40% greenhouse gas emissions reduction target, set for 2030 by the Government, is ambitious. Achieving it requires the active involvement of non-state actors in the implementation of low carbon development actions, which combine high social impact and scalable potential. This project will identify and progress opportunities to advance environmental objectives through enhancing the economic and social resilience of urban communities in Armenia. The proposed pilot of a model for the planning, implementation, partnering and robust monitoring and reporting on low carbon development outcomes, will be designed so as to be replicable in other communities of the country. The ultimate objective of the project is to deliver benefits for the most vulnerable segments of the population and disadvantaged communities, thereby paving the way for a just transition to a green economy in Armenia involving non-state actors, including communities.

The inception phase of the project will provide foundations for sustainability and replication for a “green recovery”, that in turn will boost the security, reliability and affordability of energy in Armenia. Green investments have the potential to accrue social and environmental dividends while helping to generate financial benefits and contributing to economic recovery. Energy efficient (EE) and renewable energy (RE) investments in buildings and infrastructure in communities can help reduce energy bills and thus free up financial resources for alternative and immediate needs – not least in relation to vulnerable populations. This can be done while creating “green” jobs, preventing deforestation and reducing the dependence on imported fossil fuels.

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To ensure the change is replicated and mainstreamed across the country, the Project will closely cooperate with the RA Government, including the Ministry of Territorial Administration and Infrastructure, Ministry of Environment, regional (marz) and local administrations (community). As part of this effort a Project Advisory Board will be established with a high-level representation of stakeholders from the ministries, regional/local government bodies and NGOs, to provide strategic orientation to the Project.

2. DEVELOPMENT CHALLENGE AND STRATEGY

The project is designed in the context of agreed strategic priorities for supporting development outcomes in Armenia. It is also aligned to Swedish international development cooperation priorities, as articulated in *Sweden's global development cooperation in the areas of environmental sustainability, sustainable climate and oceans, and sustainable use of natural resources* and to the signature solutions in the United Nations Development Program Strategic Plan for 2022- 2025⁴.

The project aims to contribute to the goals of i) preventing climate change and reducing greenhouse gases and air pollutants, ii) reducing the vulnerability for people living poverty and iii) progressing sustainable energy systems based on renewable energy⁵, with a view for the new practices introduced to be scaled up in additional communities in Armenia.

The proposal is also aligned to Sustainable Development Goal (SDG) 7 (affordable and clean energy), SDG 11 (sustainable cities and communities) and SDG 13 (climate action).

This proposal directly responds to the need to progress to a just transition to low carbon development in Armenia, which will both address and bolster against multi-dimensional poverty. The proposal is aligned to Government of Armenia priorities, as articulated in the new Government Programme and strategies as detailed in “The Republic of Armenia Energy Sector Strategic Program (till 2040) and updated Nationally Determined Contributions of Armenia under the Paris Agreement. The initiative is also aligned to the recent draft of “National Program on Energy Efficiency and Renewable Energy for 2021 to 2030 and Triennial Action Plan for the First Phase of its Implementation” (available for public discussion in Armenian [here](#)).

Energy is a strategic sector for the country, playing a key role in meeting national development goals, ensuring security, reliability, as well as affordability of energy services for population. The sector predominates in the country's total GHG emissions (with the share of up to 70 per cent) and has the highest mitigation potential as well.

Under the Comprehensive and Enhanced Partnership Agreement (CEPA)⁶ signed by Armenia with the European Union, the energy sector is defined as an important area of cooperation. CEPA highlights changes to energy strategy and policy, enhancement to energy security, including the diversification of energy sources through promotion of renewables. The project will contribute to the requirements of CEPA by promoting the energy efficiency solutions in public and residential buildings and the utilization of solar energy resources, while providing lessons for the development of energy sector strategy and policy, among others on community level.

Resource poverty

People living in the 48 secondary cities in Armenia had the highest poverty rate (of 34 percent), in 2015), compared to rural poverty (30%) and in Yerevan (25%)⁷. Multidimensional poverty analysis shows that poor households have low educational attainment and inferior health outcomes. These disparities in education and health outcomes not only shape an individual's wellbeing, but also determine his/her ability to participate in an inclusive economic growth process and engage in society.

⁴ <https://www.undp.org/publications/undp-strategic-plan-2022-2025>

⁵ <https://www.government.se/49ae5f/contentassets/8d99ab613d4d476794495d6e4859c3aa/strategy-for-swedens-global-development-cooperation-in-the-areas-of-environmental-sustainability-sustainable-climate-and-oceans-and-sustainable-use-of-natural-resources-20182022.pdf>

⁶ https://ec.europa.eu/commission/presscorner/detail/en/IP_21_782

⁷ <https://documents1.worldbank.org/curated/en/716961524493794871/pdf/Armenia-SCD-in-Eng-final-04192018.pdf>

Energy is a key resource for development. Traditional indicators show that energy affordability is a salient issue in Armenia, affecting the poor and vulnerable groups more acutely. For example, energy represents a substantial share of household consumption in Armenia: energy expenditures account for 12.4 percent of overall household expenditures and electricity accounts for 6 percent. About 11.2 and 52.5 percent of the households in Armenia are estimated to be “electricity and energy poor”, respectively. Further, energy costs are expected to increase further, given the sizeable, expected investments in the power sector and the trajectory of international gas prices.

According to [a recent](#) report by GIZ, half the population in Armenia cannot afford sufficient warmth in their homes – due to high heating costs (on average \$10.36/m² throughout the heating season, if 100% thermal comfort is guaranteed). The heavy heating demands, due to low efficiencies and large heat losses, place a major financial burden on household disposable incomes, leading them to fuel poverty. Many families chose to save by underheating or partially heating their homes.⁸

Increasing energy efficiency is the least-cost option for meeting the demand. For example, the cost of saving 1kWh of electricity, is estimated to be 25 to 30 percent of the long-run marginal cost of new supply. A focus on energy efficiency would also address affordability concerns, as well as contributing to increased energy security if its efforts are combined with the development of renewable energy (National Energy Security Concept, 2013). Concurrently, the cost of solar water heating (SWH) and photovoltaic (PV) systems are falling, and there is a high level of solar radiation on the territory of Armenia.

Enhancing energy resilience at the household level, through well targeted actions on making energy goods and services more affordable, available and accessible, will improve the prospects of households with dependents and a single female earner, as well as households with majority of women. These households are particularly vulnerable to poverty and old-age poverty⁹.

Opportunity and choice

With limited income, the **sunk costs** of introducing higher energy performance systems are currently perceived to be barely affordable, both for the population and the municipality. So, the public’s choice is limited to the existing modes of operation, even if most citizens opt out of burning wood and placing their forests at risk. Further, EE and RE solutions are barely marketed in secondary cities, and therefore are not available to our target group within these cities.

Power and voice

Energy democracy, the notion that communities have to shape their energy future, is currently not a reality in many communities in Armenia. This stems from i) a low level of the population’s awareness of their rights, available solutions and the benefits they can bring, ii) limited options to demand action from the state agencies and local governments in an organized manner and iii) significant financial constraints.¹⁰¹¹ Energy insecure households have limited power and voice to influence their situation.

The project’s concerted interventions will increase the citizens’ awareness of better options for the energy efficient retrofitting of buildings, higher energy performance in lighting etc., and orient them towards the daily use of contemporary technologies – by demonstrating tangible examples in their local environment. Our replication strategy will also increase understanding of pathways for energy insecure community members in other secondary cities, to improve their power and voice to influence community decisions, including budget allocations. Opportunities to empower women

⁸ GIZ report on “Energy demand, supply and efficiency in rural Armenia: baseline data collection and analysis”, 2019, page 14, https://biodivers-southcaucasus.org/uploads/files/Baseline_Study_ENG.pdf

⁹ World Bank Document

¹⁰ REACH (2021) Capacity and Vulnerability Assessment (CVA). Yerevan

¹¹ GIZ (2019). Energy demand, supply and efficiency in rural Armenia: baseline data collection and analysis. Yerevan

and youth to actively participate in this process will be a priority, building on UNDP's participatory approaches used in ongoing women leadership projects in Armenia

Human security

As demonstrated in the Socio-Economic Impact Assessment of the Covid-19 outbreak¹² and thereafter in the Multi-Sectoral Needs Assessment following hostilities in and around Nagorno Karabakh¹³, communities across Armenia have experienced significant stress in their ability to cover energy and other utilities bills in the context of crisis. The latter assessment also highlights that people's perception of safety in their communities has been negatively impacted. Building on the well-researched assumption that street lighting can make people feel safer¹⁴, the proposed activities will add to the safety of walking and driving through prolonged hours of the outdoor lighting systems operation with an additional benefit of improved energy performance.

Moreover, current EE and RE solutions impact on the wellbeing of people, putting health and safety risk. Women, who are responsible for most of the household related tasks,^{15 16} are particularly exposed to unhealthy indoor temperatures and poor air quality, driven by ineffective heating and insulation as well as increasingly common extreme weather conditions. This is also an issue for people working in or using public buildings, not least schools, kindergartens and sports facilities. Thus, applying a gender lens when selecting buildings will be of high importance and will help to identify and address human security issues faced by women, men, girls and boys respectively.

Learnings from past programming

The lessons learned from each, relevant, completed project, detailed in Annex 5 which includes the Global Climate Fund (GCF) *De-risking and scaling up investment in the energy efficient building retrofits projects*, have been taken into account, and the respective insights contributed to the rationale of this proposal. The following specific lessons arise from our GCF project:

- Before the intervention, conduct a survey among the intended beneficiaries to introduce precision into the estimated outcomes of the effort. For instance, a household vulnerability assessment survey was conducted in Yerevan in 2019 to underpin selection of the buildings for retrofit activities;¹⁷
- The preferred multi-apartment building's residents had a proven source of co-financing (such as a monthly rental fee from telecommunications organizations for the antennas installed on the building roof), were familiar and demonstrated a positive attitude towards energy efficient technologies, and had a functional condominium in place;
- To operationalize the intervention, the major issue is the necessity to strengthen coordination between the key actors, such as State Subvention Programme, partner Communities, Project Implementation Unit of the line Ministries, contributing Foundations and others. Importantly, this includes timely amendment of the underpinning documentation, such as local procurement plans and budgets;
- Proactive continuous contact with high-tier officials at GCF and EIB must be in place to facilitate timely transfer of the funds per the signed agreements thus sustaining the project's

¹² UNDP (2020). Socio-Economic Impact Assessment of the COVID-19 Outbreak in Armenian Communities. Yerevan

¹³ REACH (2021). Armenia 2021 Multi-Sectoral Needs Assessment (MSNA). Yerevan.

¹⁴ Steve Fotios & Holly Castleton (2016) Specifying Enough Light to Feel Reassured on Pedestrian Footpaths, LEUKOS, 12:4, 235-243, DOI: 10.1080/15502724.2016.1169931

¹⁵ GIZ (2019). Energy demand, supply and efficiency in rural Armenia: baseline data collection and analysis. Yerevan

¹⁶ UNDP (2020). Socio-Economic Impact Assessment of the COVID-19 Outbreak in Armenian Communities. Yerevan

¹⁷ "Report on Social and Economic Vulnerability Assessment of Households", 2019, <https://mershenq.am/en/publication/17>

milestones and ensuring the projected outcomes. Also, cross-project cooperation must be strengthened with similar initiatives within UNDP for experience exchange and synergy.

A World Bank evaluation¹⁸, of a pilot of energy efficient solutions in public buildings in Armenia, found that it is necessary to facilitate the commitment of the private sector, to develop prospects for scale up and energy efficiency market transformation. The same evaluation found that demonstration effects, of the viability of solutions, can only influence positive systemic change in the policy/regulatory framework, if there is government commitment to the approach, and long-term funding. Finally, the evaluation found that the design of a pilot project needs to go beyond demonstration effects, to lay the groundwork for sustainable operations.

Having considered these lessons, we consider that:

- Adaptive management is vital when seeking transformation in market systems, including conducting sufficient analysis of the core transaction market, the identification of functions and rules, constraints, stakeholders, the dissemination of information, the timing of demonstration projects and ensuring the iterative nature of key activities;
- In thin and nascent market systems, careful engagement in the core transaction market (the buying and selling of *relevant and scalable* energy efficiency and renewable energy solutions) may be required, to stimulate change in the behavior of public and private market system actors and the performance of functions and rules;
- It is important, that improved energy consuming systems undergo a technical audit, an evaluation and an assessment via public perception surveys, which take into account the inevitable lag between their installation and the generation of private and social benefits;
- It is crucial that skills development, relevant to improved packages and maintenance, be included in the package of interventions, so that the necessary monitoring and maintenance can be undertaken; and,
- Procurement documentation must include detailed requirements for the requested equipment and services, that reference enhanced norms and standards, while requesting *suitable and scalable* energy efficient and renewable energy solutions from the bidders as opposed to supply of equipment without linkage to the site of its further operation.

Given the nascent and thin nature of the market system in secondary cities, the project proposes an umbrella of the interconnected interventions in public and residential sectors in one selected community, that can ensure net social and private benefits for the town and households. This approach is aligned to the principles of applying market development approaches in thin and nascent markets¹⁹. Further, Sida funds will be employed to leverage public and private investment, and improve development impact. Each of the interventions will be carefully considered, and will rely on evidence and the long-term experience of UNDP in implementing similar initiatives.

Transparent operational and financial mechanisms, and a reliance on UNDP's proven procurement procedures for necessary tenders, will be applied. At the same time, public co-financing will be channeled through established procedures of the state subvention program. For a summary of the relevant UNDP experience, please refer to Section 9.

Projects related to EE and RE are continuously implemented by an array of international donors, such as GIZ, EIB, WB, GCF, ADB and others (grants and loans). While specifics of their experience

¹⁸ Please refer to Performance Report of Energy Efficiency Project, produced by IEG for WB, IFC and MIGA in March 2019, https://ieg.worldbankgroup.org/sites/default/files/Data/reports/ppar_armeniaenergy.pdf

¹⁹ For instance, see the BEAM Exchange on working in thin and nascent markets: <https://beamexchange.org/guidance/intervention-stages/thin-markets/>

counteracting with local authorities and companies may differ from that of UNDP, the key lessons are still conditioned by the country's context.

3. RESULTS AND PARTNERSHIPS

Our proposed approach seeks to generate sustainable and scalable change in energy efficient and renewable energy market systems in Armenia's secondary cities. This is why we propose to adopt the market systems development approach, and adapt it to the realities of working in thin and nascent markets. Operating in thin and nascent markets often requires an expanded use of cost share subsidies, balanced expectations, the crowding in of organisations, intensified pilot support and enabling environment support to stimulate the core transaction market, and thereafter changes in behaviours in key functions and rules.

Target groups

In adopting the market systems development approach, we identify our target group as the most vulnerable individuals in Armenia's secondary cities. These include the old, the young, the disabled and poor and female headed households. These groups are most vulnerable to income and energy insecurity, and often lack power, voice and choice to influence and actively partake in the green transition. We aim to reach this target group through stimulating the core transaction market, and the functions and rules, associated with suitable and scalable renewable energy and energy efficient solutions. This target group will benefit from solutions implemented in their places of residence and use, such as identified public buildings, including sports halls, kindergartens and schools. Our approach also focusses on deriving benefits for public and private employers and employees by supplying solutions, and in performing functions and rules.

Reaching this target group is not without its challenges, which is why we include a multi-dimensional poverty analysis and a market systems development analysis component in our approach. Importantly, our analytical approach allows us to identify the socio-economic situation of vulnerable groups, and identify the number of vulnerable households (female headed households) that will be impacted by our interventions. We will keep a focus on this target group throughout the implementation of activities.

Target community: Alaverdi

The community has been identified based upon the following criteria:

- (i) The existence and severity of multi dimensionally poverty;
- (ii) A willingness to embark on a low carbon footprint journey, i.e., to invest human resources and time into knowledge building and upgrading of institutional culture, to pilot the new technologies and applicable financial schemes, and to restructure the costs and redistribute available resources towards long-term green development;
- (iii) The availability of suitable and structurally sound buildings and public facilities for the adoption of EE and RE solutions;
- (iv) The co-financing capabilities of the community, and readiness to further increase the budgetary expenditures on green energy solutions;
- (v) A relevant energy profile and the potential for ensuring sufficient energy savings and GHG reduction levels; and

- (vi) The proximity and visibility from interstate highways and/or major transportation hubs for better public awareness and outreach.

The town of Alaverdi, in the Lori region, is located on the steep slopes of the Debed River gorge, 167 km from the capital Yerevan and 44 km from the regional centre Vanadzor. The town is located at the north-eastern part of Armenia, near the border with Georgia. The area of the city is 48 km², the altitudes range from 770 to 1450 m above sea level. The enlarged community of Alaverdi includes the villages of Akori, Kachachkut, Haghpat, Tsaghkashat and Jiliza.

Income poverty exceeds 20%. Average household income is about 890 thousand to 1 million AMD annually, and per capita monthly income fluctuates between 30 to 40 thousand AMD²⁰. The population is aging and younger male citizens are migrating. The dependency ratio is 2:1. This is declining. Nevertheless, about 49% of the population are economically active. Recent developments include the emergence of clothing manufacturing, which largely employs women. The closure of the copper smelter plant has, however, resulted in lay-offs, with subsequent secondary effects on the local economy.

The community is eligible for environmental subsidies, because of its proximity to polluting industries (a now closed copper smelter factory and nearby mining). These subsidies could be used as the community's co-financing for the project. Further, the community has recently shifted its development paradigm from being an industrial city to transitioning to a settlement that will be attractive for tourism. The results of this project will contribute to this shift in paradigm. Finally, the community is located on the main highway linking Georgia and Armenia.

Energy poverty is evident from the significant reliance on firewood for heating. There is also limited availability for more sustainable sources of energy. All of the 183 multiapartment buildings (5,157 apartments) of the town were constructed before the independence era and do not exhibit the necessary thermal characteristics to consider them compliant with the modern energy efficiency standards.

Many households in Armenia's Alaverdi city cannot afford to heat their homes with natural gas. Families would have to spend an extra 60 000 drams a month to heat their homes to a comfortable level but many cannot afford to pay the money.

Source: <https://a1plus.am/en/article/128224>

The main socio-demographic data of Alaverdi town is summarized in the below table:

Permanent population as of 1st January 2021	Number of families receiving allowance	Number of persons with disabilities	Share of women in total number of population, %
12,400	641	1,364	52,7

Due to the affordability of alternatives, easily accessible firewood is mostly used for heating apartments. This adversely affects the nearby forests and has a negative impact on indoor air quality. The waste management system needs improvement, to ensure the least possible negative impact on the environment. The drinking water supply comes mainly from natural springs, but insufficient filtering and chemical processing potentially open the way for infections.

²⁰ Report on "Disaster Risk Analysis of Alaverdi consolidated community of Lori marz" by "Enhancing Human Security in Communities of Armenia" project, 2019 (in Armenian, Section 1)

Alaverdi community is signatory to the Covenant of Mayors and with help of the EC funded project and has developed the draft Sustainable Energy and Climate Action Plan. Certain knowledge and expertise were gained by the administration of the community on importance of systemic monitoring and analysis of the energy related expenses, particularly ones which impact the community budget. Currently, the community employs modest bundled operational divisions for power network maintenance and provision of communal/municipal services, which work in close cooperation and support the energy efficiency initiatives the town experienced so far. There is a utility Community Non-Commercial Organization (CNCO), with a staff of around 30 people, 12 of which are women, with limited capacity, which is mainly in charge for waste management, landscaping, outdoor/street lighting and associated maintenance works. We will further elaborate and enhance the capacity of the Municipality in systemizing energy operations during the inception period, based on their intent to recruit an Energy Manager, to establish an energy management system and elaborate a monitoring plan (see the Letter of Commitment).

The project will also make an assessment of the energy management capabilities and practices at the municipality including opportunities for creation and deployment of an energy management system, capacity development needs assessment for personnel and budgeting.

An overview of the market system

The market systems for renewable energy and energy efficiency in Alaverdi is emerging. Early developments have included public investments in EE and RE projects, with co-financing from the community and donor support. Solutions have included the modernization of indoor and outdoor lighting, the installation of roof-top PV systems at municipal buildings and the installation of energy efficient windows. However, these solutions have been implemented in a piece meal fashion, without plans to stimulate the core transaction market within the community for sustainable change, nor provide a mechanism for replication to other secondary cities. There are very few instances of households investing in EE and RE solutions.

A critical function is the provision of financing to our target group for EE and RE solutions. The absence of incentives, high interest rates, collateral requirements, long payback period for certain energy efficiency measures etc. are particularly restrictive for our target group. Therefore, potential consumers of EE and RE solutions hesitate acting on their own, without mediation or additional incentives. This is also currently the case in advanced economies. Our approach will seek to drive improvements in the private financing function, and rules in terms of subsidies. We also set out to identify the availability of local skills related to the installation, maintenance and up-scaling of the solutions. Sida and Helveta's "Reconomy" programme is currently engaged in a pilot project in energy efficient and renewable energy skills, and we will engage with Reconomy to further benefit from Sida's investments.

The municipality has prioritized sub systems, for the proposed project areas in the following priority order:

1. Public buildings (PB) retrofit;
2. Deployment of solar PV and SWH systems;
3. Multi-apartment buildings (MABs) retrofit; and
4. Street & indoor lighting upgrade.

4. TENTATIVE ACTIVITIES TO BE IMPLEMENTED

While the Project Document will outline detailed activities for implementation stage, which will be summarized and reported by annual reports subsequently, below is outlined tentative range of activities to be implemented during the 30- month implementation phase.

Facilitative approaches will be used that catalyze changes in the market system. The interventions will be implemented in finance, building skills and processes, provision of EE and RE solutions and information. The monitoring of energy use outputs will demonstrate the value in the new practices. We will carefully consider the most appropriate facilitative tool for each task, which acknowledges the thin and nascent nature of the market system. We will adopt an intervention management process that incorporates steps and documentation that allows for adaptive management. This will include the use of intervention concept notes, partnership justifications and agreements (where necessary), quarterly reviews of individual partnerships and 6 monthly reviews of the entire portfolio will be prepared.

UNDP will utilize its established procurement mechanisms, for all direct support to partners.

OUTPUT 1: Green Recovery through Low Carbon Practices Capacity Building and Awareness Raising

Activity 1.1: Provision of technical support for undertaking municipal energy audit and energy management system established

The energy audit of public facilities of the community will be done using the national standards and experience of pilot work done by UNDP in Stepanavan community of Armenia. The project will ensure involvement of local admiration specialists and local specialists, also ensuring equal participation of women in evaluation of the baseline situation and prioritization of EE&RE measures and cost-effective actions.

The documentation and procedures for establishing energy management system in community will be developed in close consultation with administration with early involvement of corresponding staff member based on commitments of the head of community. The monitoring and evaluation of the proposed actions, as well as protocols of the EE and RE actions planned under Outcome 3 of the Project will be developed and formally approved by the Elderly Council of the community.

Activity 1.2: Advocacy, information sharing and communication support on benefits of low carbon development for communities and vulnerable groups

Awareness and advocacy measures for full and inclusive participation of community residents in planning, prioritization and implementation of low-carbon measures, and assessment of co-benefits will be ensured through detailed communication strategy. The local TV channel will be used for information sharing on improved resilience, increased savings and improved health conditions. The socially vulnerable groups will be identified in close cooperation with social workers of the community administration to be targeted through the energy poverty reduction measures planned under Outputs 2 and 3 thus to maximising benefits for social vulnerable groups,

Activity 1.3: Involvement of community based and women lead organizations in decision making process and advocacy for low carbon development

Capacities of local NGOs enhanced to protect rights of women and socially vulnerable people on equal access to and equitable benefits from low carbon practices

The plans will also include a focus on public awareness and behavioural change towards sustainable green solutions.

Expected results: Owing to the MEA, the local administration of the community is well aware of energy performance and other characteristics of the corresponding municipal structures and is capable to identify, develop, implement and monitor EE and LED interventions through the operational EMS. Households of target MABs and beneficiaries from public buildings, as well as general public being affected by the measures implemented, will gain knowledge on the EE and RE technologies introduced in the community, capacities of the local population will be enhanced through various outreach and awareness raising campaigns. Local NGOs and community-based organisations are knowledgeable to represent and protect rights of women and socially vulnerable people on equal access to and equitable benefits from EE and LED interventions.

OUTPUT 2: Energy savings improved in public facilities and residential buildings

Activity 2.1: Implementation of energy efficiency measures in public and residential buildings

Building's energy efficiency characteristics improved, through implementation of complex or partial retrofits of the building's envelope. The energy efficiency retrofits will be based on the assessments undertaken under Output 2. The energy audits recommendations will be discussed and agreed with community administration and the co-financing agreements will be signed and serve as a base to perform reconstruction measures. The target buildings in public sector will be identified through transparent and participatory processes, having as main criteria cost efficiency and number of the beneficiaries. In residential buildings priority will be given to multi-apartment panel buildings with poor thermal characteristics and to vulnerable families in dispatched houses for solar-water heating installations, as well fuel-change.

Activity 2.2: Energy efficient upgrade of indoor and outdoor lighting

The street lighting systems and indoor lighting in public facilities will be upgraded based on baseline assessment. The direct energy savings will be monitored and recorded.

Expected results: In total, it is estimated that 9 MABs and 2 public buildings will be energy retrofitted, as a result of which around 2,300 MWh/year of energy will be saved, with around 580 tonnes of CO₂ reductions per annum. Total number of beneficiaries from Activity 2,1, is expected to be around 2,000 community members. This will drastically improve the energy resilience of the community, setting pathways to meet commitments made under SECAP. Additionally, the residents and community will have budget savings of around USD 100,000 per annum.

Street lighting systems of around 12 km community routes is foreseen to be upgraded through installation of LED luminaires, which would result in about 150 MWh/year energy savings, with derived CO₂ emissions reduction of 60 tonnes per annum. Around 1,500 community members will benefit from Activity 2.2.

OUTPUT 3: Access to green and affordable energy sources is enhanced

Activity 3.1 – Deployment of solar PV and solar thermal systems in public facilities

The Solar PV systems installation sites will be discussed and agreed with community administration during inception phase. The main criteria for installation of SWH systems in public facilities as well PV systems will be community commitment for co-financing. The selection sites of the will

be based on availability, eligibility and characteristics of the infrastructure (e.g., roofs and lands). The local specialists will be involved in installation activities and will be trained for proper O&M of the installed facilities.

Activity 3.2 – Solar thermal systems in residential sector. In the course of inception phase will be deployed potential for market actors involvement for promotion of low cost renewable energy installations in residential sector.

Expected results: This initiative might become one of the major impact generating and visibility ensuring activity with potential for market intact and private sector involvement. The PV installations in community land and public facilities will be main savings generating activities which will be accumulated in the municipal special fund to be used for scaling socially oriented green solutions in the community on continuous base.

5. MANAGEMENT ARRANGEMENTS

Advisory Board

In line with UNDP's Programme and Operations Policies and Procedures, the Project will closely cooperate with the Government, including the Ministry of Territorial Administration and Infrastructure, the Ministry of Environment, local administrations of the target community. This will be conducted through the establishment of a Project Advisory Board with high level representation of stakeholders to provide strategic orientation to the Project. It will also highlight the knowledge gaps and elicit the needs of local level stakeholder and involved professionals, to ensure their meaningful participation in the respective activities.

The Board will hold annual meetings with the participation of the donors to: 1) review progress in the implementation of the project including inter alia the results achieved and lessons-learned and 2) discuss strategic direction and adjustments for the remainder of the activity period. UNDP shall consult with donors on timing of such a meeting and make the documentation for the meeting available to one month in advance of the meeting.

The Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.

Apart from the Project Advisory Board meetings and for the purposes of closer engagement with the respective government agencies, the UNDP will conduct a series of dedicated meetings with the key stakeholders, such as the Ministry of Territorial Administration and Infrastructure to ensure their close involvement through the implementation process and as well as the sense of "ownership" and commitment

Monitoring and evaluation plan

The appropriate indicators will be defined and measured in accordance with monitoring and evaluation plan provided in the final report of inception phase. We recognize that our outputs must remain within our sphere of influence, and that progress towards systemic change through new behaviors, in businesses and authorities, should be captured at the intermediate outcome level. Our support to an energy management system could allow for results to be captured and communicated at the outcome level. Special attention will be paid to gender impacts, and findings in this respect will accordingly be reported.

Reporting

The project will deliver annual reports to Sida, that describe progress in activities, results at the outcome and impact level and an outline of the activities to be implemented in the following year. This annual report will include an updated risks and challenges register.

We will also develop the project Final report document. This will follow UNDP's internal requirements, and will be in compliance with included exit and program closure details.

Exit strategies will be developed for all interventions and engagements. Towards the end of the program, we will reinforce the sustainability of the new practices and will conduct a series of lesson learning events with public, private and civil society stakeholders.

Tentative approach to replication

We acknowledge that we can only achieve wide scale change for our target group, if the new practices catalysed in Alaverdi can be replicated in additional secondary cities. We have identified the following channels through which replication in other Municipalities can progress. These will be confirmed, and adapted, during the Advisory Board second meeting.

1. Sharing experience through case studies on each of the new practices
2. Engaging at the outset, with market actors who have the interest and capability to support replication (such as banks, national installers of solutions and the Ministry of Territorial Administration and Infrastructure)
3. Inviting the actors to the implementation site to get hands-on experience
4. Informing on the mode of participation, including share in funding
5. Highlighting the widening development outlook with the proposed instruments
6. Brokering public-private relationships
7. Utilising established platforms of mayors and sub national authorities

We also want to provide space for program supported replication. An indicative candidate community for potential program supported scale up is Akhuryan, Shirak region. This is a consolidated community including 7 settlements with a population of 17,000, which will be expanded to 26 by the end of 2021. The community is a typical representative of rural communities in Shirak region, with the highest poverty rate (45%). The population is mostly engaged in agriculture and husbandry. Around 50% of males have out-migrated, increasing the burden on women in running the households. Experiencing high energy poverty, the population relies on wood and cow dung for heating purposes with only 25% gas use (only 4 out of 8 settlements are satisfied). UNDP has substantial experience in this Municipality.

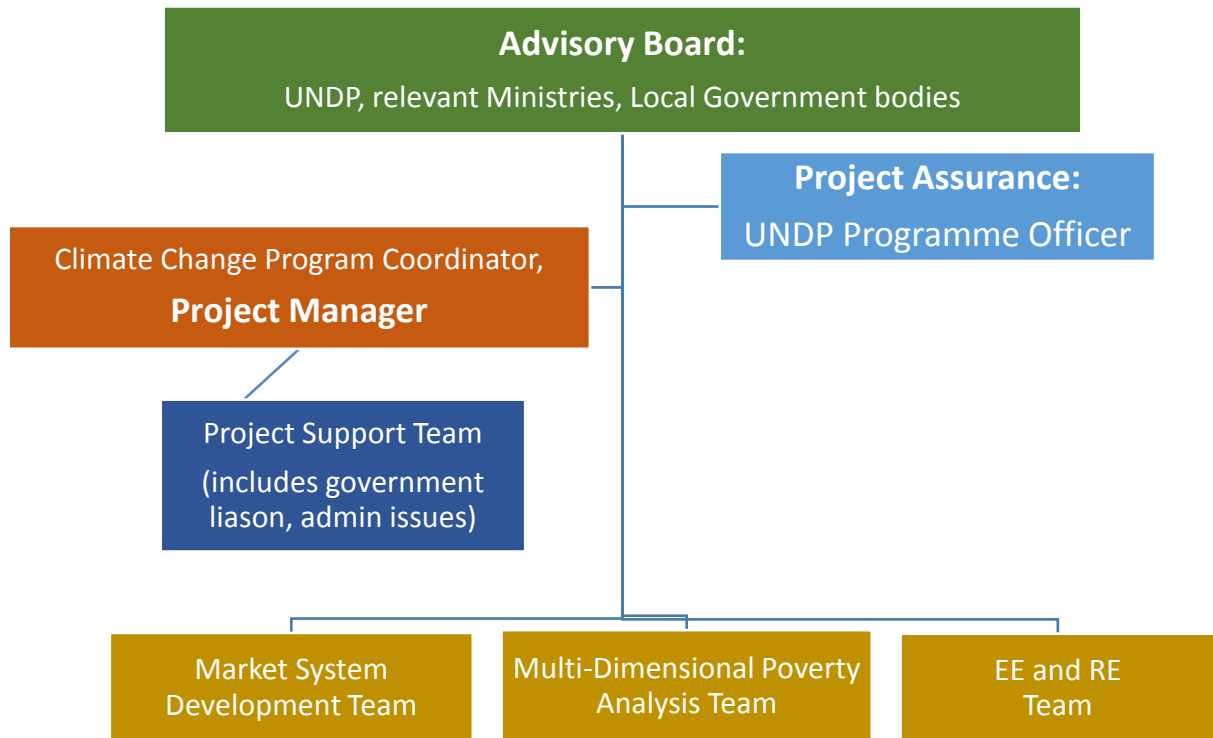
Project Manager: has the authority to run the project on a day-to-day basis on behalf of UNDP. The Manager will ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost. This actor will also be responsible for the government liaison to sign the necessary memoranda of understanding / statements of intent (see Section 7.5) and will ensure the necessary teamwork quality to produce the proper design of interventions (see Section 7.4).

Quality assurance will be undertaken by UNDP's Programme Officer by carrying out objective and independent project oversight and monitoring functions.

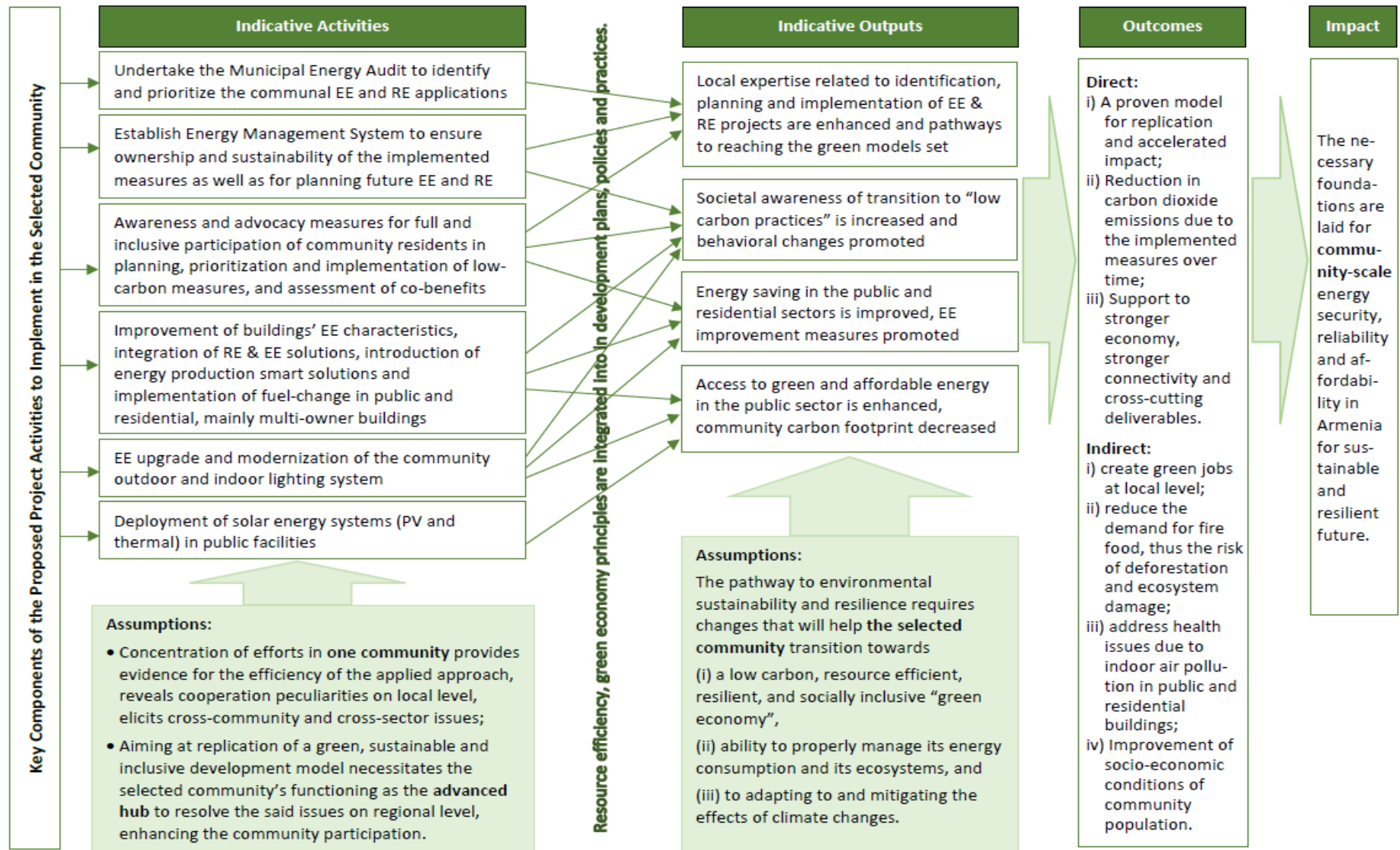
Experts and consultants: To ensure the relevant expertise, the project will hire two market system researchers, to specialise in municipal sector and in vulnerable households' issues. Their work will be brought together and complemented by an international expert in market systems development. Another expert will contribute to multi-dimensional poverty analysis, ensuring correct application of the envisaged methodologies. The energy systems engineers will be responsible for planning and

supervision of energy efficiency and renewable energy components, as well as for energy management system establishment and trainings. Experts will be hired to perform a simplified assessment of the project’s environmental impact; communication policy of the project; stakeholder engagement, etc.

In order to ensure the smooth start-up and successful implementation of its activities, the project will use the knowledge, expertise, and capacities that have been accumulated by the UNDP Climate Change Programme.



6. TENTATIVE THEORY OF CHANGE



7. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement (SBAA) between the Government of the Republic of Armenia and UNDP, signed on March 8, 1995. All references in the SBAA to “Executing Agency” shall be deemed to refer to “Implementing Partner.”

This project will be implemented by UNDP (“Implementing Partner”) in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

8. RISK MANAGEMENT

The project will apply direct implementation modality:

1. UNDP as the Implementing Partner will comply with the policies, procedures and practices of the United Nations Security Management System (UNSMS.)
2. UNDP as the Implementing Partner will undertake all reasonable efforts to ensure that none of the project funds²¹ pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.
3. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (<http://www.undp.org/ses>) and related Accountability Mechanism (<http://www.undp.org/secu-srm>).
4. UNDP as the Implementing Partner will: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.
5. All signatories to the Project Document shall cooperate in good faith with any exercise to

²¹ To be used where UNDP is the Implementing Partner

evaluate any programme or project- related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

6. UNDP as the Implementing Partner will ensure that the following obligations are binding on each responsible party, subcontractor and sub-recipient:
 - a. Consistent with the Article III of the SBAA, the responsibility for the safety and security of each responsible party, subcontractor and sub-recipient and its personnel and property, and of UNDP's property in such responsible party's, subcontractor's and sub-recipient's custody, rests with such responsible party, subcontractor and sub-recipient. To this end, each responsible party, subcontractor and sub-recipient shall:
 - i. *put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;*
 - ii. *assume all risks and liabilities related to such responsible party's, subcontractor's and sub- recipient's security, and the full implementation of the security plan.*
 - b. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the responsible party's, subcontractor's and sub-recipient's obligations under this Project Document.
 - c. Each responsible party, subcontractor and sub-recipient will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, subcontractors and sub-recipients in implementing the project or programme or using the UNDP funds. It will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.
 - d. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to each responsible party, subcontractor and sub-recipient: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. Each responsible party, subcontractor and sub-recipient agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.
 - e. In the event that an investigation is required, UNDP will conduct investigations relating to any aspect of UNDP programmes and projects. Each responsible party, subcontractor and sub-recipient will provide its full cooperation, including making available personnel, relevant documentation, and granting access to its (and its consultants', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with it to find a solution.

- f. Each responsible party, subcontractor and sub-recipient will promptly inform UNDP as the Implementing Partner in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

Where it becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, each responsible party, subcontractor and sub-recipient will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). It will provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

- g. UNDP will be entitled to a refund from the responsible party, subcontractor or sub-recipient of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of this Project Document. Such amount may be deducted by UNDP from any payment due to the responsible party, subcontractor or sub-recipient under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail any responsible party's, subcontractor's or sub-recipient's obligations under this Project Document.
- h. Each contract issued by the responsible party, subcontractor or sub-recipient in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from it shall cooperate with any and all investigations and post-payment audits.
- i. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project or programme, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.
- j. Each responsible party, subcontractor and sub-recipient shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to its subcontractors and sub-recipients and that all the clauses under this section entitled "Risk Management Standard Clauses" are adequately reflected, mutatis mutandis, in all its sub-contracts or sub-agreements entered into further to this Project Document.

9. ANNEXES

Annex 1: Work Plan of the Inception Phase

The workplan for the project implementation phase (30 months) will be presented in the Inception Report when the main variables are clarified, assumptions validated, partners commitments confirmed and intervention design completed. The workplan will be presented to the Advisory Board for approval.

N	Activity																				
		Jan				Feb				Mar				Apr				May			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Kick-off and establishing Project Advisory Board																				
2	Multidimensional poverty analysis																				
3	Multidimensional poverty assessment results presentation																				
4	MSD analysis																				
5	Intervention design																				
6	Environmental impact assessment																				
7	Monitoring and evaluation plan development																				
8	Inception phase report																				

Annex 2: Risk Management

#	Description	Risk Category	Risk Rating	Comments / Management Response	Risk Owner
1	Risks associated with political developments and elections, instability of national and LSG structures, limited interest of local authorities in EE & RE and low emission development because of other social and economic priorities.	Political	High	<ul style="list-style-type: none"> The effectiveness and consistency of interaction with national and, particularly, with local administrations will largely depend on influence of national and local events and political stability in the country. Snap parliamentary elections held on 20 June 2021, followed by the process of gradual forming of the new government, inspires some confidence that dramatic changes in the structure of the national government during the implementation of the project should not occur. However, there are uncertainties associated with the possible aggravation of the situation in NK, as well as the continuing facts of the escalation of the situation on the Armenian-Azerbaijani border. These possible developments may have certain influence on local authorities as well. Hence, the Project will closely monitor the situation and adapt to political developments in consultation with the partners from UN/DP and Sida. Active interaction with national authorities having political influence and financial influence on municipalities (particularly, with MoTAI) will be maintained by the project, using the mechanisms of effective cooperation already established by UNDP. At the same time, more active involvement of local municipal specialists of the selected community shall be ensured to, as far as possible, mitigate possible risks associated with a change of the local administration. 	UNDP, MoTAI
2	Municipal staff turnover and insufficient capacities and qualification of municipal specialists, including people key for the successful implementation of the Project.	Operational	Medium to High	<ul style="list-style-type: none"> The Project has limited influence on municipal staff turnover, particularly in the case of a change of city administration. Nevertheless, the necessary actions will be taken to: (i) identify the most appropriate municipal specialists with the needed qualification and ensure designation of these specialists as main contact persons for the purposes of the Project, (ii) ensure proper training and capacity building of the identified staff, and (iii) contribute, to the possible extent, to the motivation of local specialists and their commitment and sense of ownership of the Project and its results. In this context it is important that all three pilot communities have experience of implementation of EE & RE and of membership in the Covenant of Mayors for Climate and Energy. 	UNDP, community
3	Uncertainty around the government budget availability for	Financial / Operational	Medium to Low	<ul style="list-style-type: none"> The Project implementation strategy is based on the principle of co-financing of the proposed activities by the State Subvention Program and community budget. Following the adjustments in the Program for 2021-2023 made by MoTAI the Program, has been 	UNDP, MoTAI

#	Description	Risk Category	Risk Rating	Comments / Management Response	Risk Owner
	the State Subvention Program following the NK conflict and co-financing by the selected community			<p>successfully supporting materialization of hundreds of municipal infrastructure projects since 2018 and will continue co-financing of municipal actions at least until 2023. Thus, the Project will focus on cooperation with MoTAI and the selected community under the State Subvention Program to ensure co-financing of the proposed activities, particularly on public and residential buildings' retrofit. To this end, upon the launch of the Project, the MoTAI will be asked to reserve funds to be allocated from the State budget for these specific multi donor-funded activities in the selected community.</p> <ul style="list-style-type: none"> • UNDP will initiate and maintain regular communication with MoTAI to emphasize the importance of continuation of State Subvention Program support for implementation of proposed activities, particularly in public and residential buildings. • A commitment letter will be provided by the selected community head to secure up to 10% co-financing of capital investments into the community infrastructure. The Project will interact with the community to make sure that the appropriate funds are timely foreseen in the municipal budget. 	
4	Possible lower interest of private households and communities to invest into energy efficiency due to the COVID-19 pandemic	Financial	Medium	<ul style="list-style-type: none"> • The Project will mostly focus on the facilities and buildings where UNDP has enlisted through conducted preliminary assessment and analysis, taking proactive measures with selected community to foster the applicable solutions accordingly. 	UNDP, community
5	Inflationary pressure and increase in cost of construction due to higher prices for imported goods and materials	Financial	Low	<ul style="list-style-type: none"> • The mainly imported new technologies and high-quality goods, materials, and equipment to be used in the process of Project implementation will have high correlation to foreign currencies (USD, EUR) exchange rates, whereas the cost of works and services will mainly be expressed in local currency (AMD). The structure of Project budget is expected to mitigate the possible currency fluctuation and inflationary pressure, as the financial inflows from the considered sources in local and foreign currencies (EUR from Sida, USD from UNDP, and AMD from community) would hedge the related risks. 	UNDP, community

Annex 3: Gender issues

The Project will ensure that the proposed EE and RE interventions correspond to the needs and expectations of men and women-headed households, as well as of female and male residents of the selected community. This will be achieved through ensuring equal participation of women and men in the project-related decision-making process and facilitating equal opportunities for engagement in and benefiting from the project activities.

Unfortunately, despite a fairly high level of education (more than 55% of women in Armenia have higher education), women empowerment and participation in decision-making processes remains critically low at all levels, particularly, in communities (women have less than 10% of representation in the local governance). According to the Global Gender Gap Report 2021, Armenia occupies the 114th position out of 156 countries in the Gender Gap Index 2021 (the 132nd place in terms of political empowerment and the 96th place in terms of economic participation and opportunities).

There is a number of society-specific structural, socio-economic and cultural factors and barriers that create gender inequality and limit women participation, including insufficient mechanisms and regulations to advance gender equality at the national and, particularly, local level:

- reluctance of national and local governance to appreciate and promote women leadership;
- limited access to resources for economic empowerment;
- lack of female leadership culture and support networks;
- power distance;
- lack of confidence and necessary skills and capacities among women²².

As a result, men actively participate in and benefit from development and implementation of climate change mitigation, green growth, and low-emission development policy, including EE & RE projects at both national and local levels, while women are not always involved equitably in these processes.

To this end, **a gender-responsive approach** will be applied to consider the most relevant structural and cultural barriers impacting women and men differently and to enlarge the scope and nature of participation of women in the sectors that are mainly male dominant. Further, the Project sets out to ensure community ownership and equal opportunities for participation for both men and women throughout the Project implementation.

Throughout the entire duration of the Project, UNDP will closely **cooperate with local NGOs to ensure consideration of special needs of women and socially vulnerable groups in the selected community**, as well as their active participation in defining targets, proposing solutions, and evaluating gender and social impact of Project measures to be undertaken.

In the table below some examples of practical application of gender-responsive approach and expected outcomes as per key activities of the project is explained.

Activity	Gender-responsive approach	Expected results
Organization of Municipal Energy Audit	Ensuring participation of female specialists of the local administration in MEA	Equal participation of women in evaluation of the baseline situation

²² Gender Equality in Public Administration of Armenia (GEPAA), www.undp.org

Activity	Gender-responsive approach	Expected results
		and prioritization of EE&RE and LED actions.
Establishment of Energy Management Systems	Designation and training of at least one female specialist of the local administration to execute functions of the Municipal Energy Manager	Promoting women's access to technical knowledge and expertise building, facilitating women participation in community decision making processes, particularly, in development, implementation and monitoring of the municipal energy policy.
Establishment of Special Purpose Municipal Fund*	Ensuring gender-balanced representation of the Board of the Fund.	Equal participation in decision making processes related to Fund activities (municipal EE and LED policy), allocation of resources, replication of EE & RE projects, etc.
Awareness and advocacy measures for full and inclusive participation of community residents in planning, prioritization and implementation of low-carbon measures, and assessment of co-benefits	At least 50% of persons to be covered by awareness raising activities of the project are women.	Women-headed households have equal access to information related to the Project and can equally impact, participate in, and benefit from the proposed activities; women are aware of co-benefits of the proposed interventions.
Capacities of local NGOs enhanced to protect rights of women and socially vulnerable people on equal access to and equitable benefits from low carbon practices	At least 50% of persons to be covered by awareness raising activities for NGOs and CSOs are women. Preference will be given to women-led organizations.	Local women-headed NGOs and CSOs have sufficient capacities to protect rights of women and SVP on equal access to and equitable benefits from LED policy and EE&RE interventions.
Building EE characteristics improved, renewable energy integrated, and fuel-change implemented in public and residential, mainly multi-owner buildings	When designing energy saving activities in public buildings, preference will be given to infrastructures most frequently or equally visited by women and children (e.g. kindergartens and child care centres, art, music and sport schools, etc.), while in case of MABs, the project will target buildings with maximum number of women-headed and low-income households. It is also envisaged to involve women in all stages of the design, implementation and monitoring of the proposed EE interventions in MABs to improve their knowledge on new technologies, ensure awareness of the achieved progress and get the most benefit from project activities.	Contribution to reduction of women's time poverty through improved services of kindergartens and child care centres and access to energy, allowing them to redirect their time to other activities, including education, business, etc. Support the female-headed and low-income (vulnerable) households to substantially reduce their energy costs, improve the comfort level in apartments, use labor-saving electrical appliances thanks to the improved EE characteristics of MABs and other interventions. To a certain extent women's economic empowerment is expected.

Activity	Gender-responsive approach	Expected results
Community streets and outdoor/indoor lighting system EE upgraded	When designing EE modernization of outdoor and indoor lighting systems, preference will be given to residential areas, as well as the areas where the infrastructures most frequently visited by women, children and SVP are located.	Safety, health, and well-being of women and their families as well as SVP is improved through better quality and prolonged duration of illumination, improved traffic safety, reduced gender-based violence, etc.
Solar energy systems (PV and thermal) deployed in public facilities	Given that women often are more important users of and contributors to social infrastructure such as education, health, and childcare centres, priority will be given to public infrastructure. At the same time, women will be involved the design, implementation and monitoring of the proposed RE interventions to improve their knowledge on new technologies, provide opportunity to be employed during construction and/or operation of the systems, ensure awareness of the achieved progress and get the most benefit from project activities.	Women and SVP may benefit from renewable energy in municipal structures through better working conditions, reduction of time poverty through improved services of municipal structures (e.g. kindergartens and child care centres), involvement in construction and O&M of large-scale renewable energy utilities.

Cooperation with Women Empowerment and Gender Equality Programme of UNDP Armenia series of leadership advancement and capacity development schemes will also be applied where relevant to strengthen the voices and participation of women in the green transformation.

**Sida will not bear any responsibility and/or commitment to follow-up on Municipal Fund activities.*

Annex 4: Tentative Budget for the Full-Fledged Project

The total Project budget is estimated at **USD 1,090,962**

UNDP, through its UNDP-GCF “De-Risking and Scaling-up Investment in Energy Efficient Building Retrofits” project, will co-fund the investment costs with up to 25% of the total construction budget for EE retrofit activities implemented in residential and public buildings.

The technical assistance will be provided as parallel funding for project design, measurement, verification, supervision and commissioning of all energy retrofit work plans, while enhancing capacities through knowledge sharing and public outreach campaigns.

An estimate of the total Project budget is presented in the table below. To note, and as explained above, the Project can be executed across two phases, based on the actual progress.

Intervention Areas	Requested from Donor	Community Contribution	UNDP co-financing from the TRAC, GCF and SGP projects	Total Budget
Inception Phase				
Inception Phase activities	50,000	0	0	50000
Sub-total	50,000	0	0	50,000
Output 1: Green Recovery through Low Carbon Practices Capacity Building and Awareness Raising				
Activity 1.1 – Energy Audit and EMS establishment	5,000	0	5,000	10000
Activity 1.2 – Public campaigns	15,000	0	7,000	22000
Activity 1.3 – NGOs’ capacity enhancement	5,000	0	5,000	10000
Workshops and trainings	6,000	0	3,000	9000
Sub-total	31,000	0	20,000	51,000
Output 2: Improved EE in public facilities and residential buildings				
Activity 2.1 – EE Retrofit works in public and residential sector	550,000	55,000	145,000	750,000
Activity 2.2 – Street & indoor/outdoor lighting upgrade	35,000	3,500	5,000	43,500
Sub-total	585,000	58,500	150,000	793,500
Output 3: Access to green and affordable energy sources				
Activity 3.1 – Deployment of solar PV and solar thermal systems in public facilities	230,000	25,000	10,000	265,000
Activity 3.2 – Solar thermal systems in residential sector	70,000	6000	50,000	126,000
Sub-total	300,000	31,000	60,000	391,000
Total per Activities	966,000	89,500	230,000	1,235,500
Project Management (5%)	44,150	0	0	44,150
Total	1,010,150	89,500	230,000	1,329,650
GMS (8%)	80,812			80,812
Grand Total	1,090,962	89,500	230,000	1,410,462

Annex 5: UNDP's experience

UNDP has a long track-record in assisting communities in Armenia in adopting and applying sustainable development solutions, in particular assessing needs, elaborating suitable solutions, fostering partnership, and promoting new means of implementation. Among others, these include support in promoting green energy solutions.

UNDP has also partnered with communities and local self-governments (LSG) in promoting installation of solar PV and solar water heating systems combined with EE measures in buildings and public facilities, as well as upgrading street lighting systems with LED luminaires.

UNDP has extensive experience also in the field of building retrofits, particularly in scope of the below described UNDP-GCF “De-risking and Scaling-up Investment in Energy Efficient Building Retrofits” Project (implementation period 2017-2023):

The project seeks to systematically de-carbonize the existing building stock in Armenia to reduce GHG emissions while achieving sustainable development benefits. To do so, the project focuses on reducing the overall investment risk profile of EE retrofits in the building sector.

The project is financed through a GCF grant of USD20 million and USD420 thousand in cash co-financing to addresses market barriers to EE building renovation via a combination of policy and financial de-risking instruments and targeted financial incentives to key market players.

Within the framework of the project UNDP is cooperating with the State Subvention Program (since 2019) coordinated by the Ministry of Territorial Administration and Infrastructure of Armenia. Within this cooperation, the project provides technical assistance to communities in understanding the benefits for EE retrofitting in buildings, preparing applications for relevant buildings, with the objective to co-finance the EE retrofits (up to 25% for full and up to 20% for partial retrofit works) from the UNDP-GCF grant component. By the end of December 2021, EE retrofits in 70 multi-apartment buildings in ten communities, co-financed by UNDP (with derived CO2 emission savings of around 4,200 tons/year), will be completed.

Due to national budget limitation for 2022 the State Subvention co-financing for MABs will be reduced and thus all other sources have to be leveraged for scaling this positive move in EE promotion in the building sector. Synergies between the current UNDP-GCF Project, the State Subvention Programme and the initiative through Sida funding can be that opportunity, where UNDP will proceed with co-funding schemes adopted for residential and public buildings EE retrofits. Hence, for residential building retrofits co-funding opportunities exists of up to 25% of the capital investment costs. Other Project related risks and mitigation measures are presented in Annex 2.

Other UNDP key achievements to date include:

- Within the broader NK crisis response, UNDP was the first agency to address the energy-related issues through **deployment of green “emergency” energy solutions** (PV, solar thermal, biofuel briquettes) and energy-efficiency measures (building insulation, street lighting upgrades) in communities severely affected by the compound crisis. So far PV solar thermal stations with 360kW total capacity have been installed in five communities hosting arrivals from NK, ensuring about USD 43,000 of annual saving.
- In 2020, the **National SDG Innovation Lab's Green Energy Project** with grant funding from the Russian Trust Fund was successfully finalised. UNDP implementing partner the Armenia's R2E2 fund supported the installation of 418 solar water heaters

and nine small PV rooftop systems with the total capacity of 33kW in the remote communities not connected to the gas network, ensuring about USD10,000 of annual saving.

- Through the **GEF-funded Green Urban Lighting Project**, UNDP audited communities municipal lighting systems in 21 urban settlements. In 16 cities demonstration projects were implemented with replacement of more than 1,200 streetlights in small cities and 4,400 in Yerevan and establishment of robust monitoring system for tracking savings and using funds for scaling similar projects in the community applying a revolving mechanism. To downscale the prototype of Yerevan revolving fund, a rural climate revolving fund model is being piloted in 6 communities by the UNDP-GEF Small Grants Programme, which proved to ensure sustainability through investing of savings from the implemented RES use and EE measures into low-carbon technologies (PV, solar thermal systems, street lighting, solar-powered irrigation, etc).

Annex 6: Tentative Activities of the Full-Fledged Project

The Project is expected to intervene with an integrated energy efficiency “complex package”, including awareness raising campaigns, establishment of municipal energy management systems, residential and public building energy retrofits, with integration of solar PV and solar thermal systems, setting path for “building forward better and greener” approaches.

Output 1: *Local expertise related to identification, planning and implementation of EE and RE projects are enhanced and the societal awareness of transition to “low carbon practices” is increased*

- **Activity 1.1:** (a) Undertake the Municipal Energy Audit to identify and prioritize the communal EE and RE applications. (b) Establish an Energy Management System to ensure ownership and sustainability of the implemented measures as well as for planning future EE and RE interventions
- **Activity 1.2:** Awareness and advocacy measures for full and inclusive participation of community residents in planning, prioritisation and implementation of low-carbon measures, and assessment of co-benefits (improved resilience, increased savings and improved health conditions) increased
- **Activity 1.3:** Capacities of local NGOs enhanced to protect rights of women and socially vulnerable people on equal access to and equitable benefits from *low carbon practices*.

Expected results: Owing to the MEA, the local administration of the community is well aware of energy performance and other characteristics of the corresponding municipal structures and is capable to identify, develop, implement and monitor EE and LED interventions through the operational EMS. Households of target MABs and beneficiaries from public buildings, as well as general public being affected by the measures implemented, will gain knowledge on the EE and RE technologies introduced in the community, capacities of the local population will be enhanced through various outreach and awareness raising campaigns. Local NGOs and community-based organisations are knowledgeable to represent and protect rights of women and socially vulnerable people on equal access to and equitable benefits from EE and LED interventions.

Output 2: *Energy savings in the public and residential sectors are improved*

- **Activity 2.1:** Building EE characteristics improved, renewable energy integrated, and **fuel-change implemented** in public and residential, mainly multi-owner buildings

Expected results: In total, it is estimated that 9 MABs and 2 public buildings will be energy retrofitted, as a result of which around 2,300 MWh/year of energy will be saved, with around 580 tonnes of CO₂ reductions per annum. Total number of beneficiaries from Activity 2,1, is expected to be around 2,000 community members. This will drastically improve the energy resilience of the community, setting pathways to meet commitments made under SECAP. Additionally, the residents and community will have budget savings of around USD 100,000 per annum.

- **Activity 2.2:** Community streets and outdoor/indoor lighting system EE upgraded

Expected results: Street lighting systems of around 12 km community routes is foreseen to be upgraded through installation of LED luminaires, which would result in about 150 MWh/year energy savings, with derived CO₂ emissions reduction of 60 tonnes per annum. Around 1,500 community members will benefit from Activity 2.2.

Output 3: *Access to green and affordable energy in the public sector is enhanced*

- **Activity 3.1:** Solar energy systems (PV and thermal) deployed in public facilities

Expected results: 5 PV systems, each sizing around 50 kW and 25 solar water heating systems (each comprised of 30-evacuated tube collectors), will be installed in residential and public facilities, ensuring energy generation of around 385 MWh/year, reducing CO₂ emissions by around 160 tonnes per annum. 27,500 community members will gain access to carbon-free energy as a result of Activity 3.1.

Activity 3.2. Renewable energy systems intake in residential sector promotion. In the course of inception phase will be deployed potential for market actors involvement for promotion of low cost renewable energy installations in residential sector.

This initiative might become one of the major impact generating and visibility ensuring activity with potential for market intact and private sector involvement.

The quantitative assumptions presented under Outputs 2 and 3 are roughly estimated figures and subject to adjustment based on the finally selected community profile.

Annex 7: Tentative Logical Framework of the Full-Fledged Project

Project objectives and activities	Indicators	Baseline	Targets End of Project	Source of verification	Assumptions and risks
Project overall objective: Enhance the economic, environmental, and social resilience of an urban community in Armenia by developing, piloting and scaling a model for EE and low carbon development that can be replicated in other communities of the country					
Output 1: Local expertise related to identification, planning and implementation of EE and RE projects are enhanced and the societal awareness of transition to “low carbon practices” is increased					
A comprehensive Municipal Energy Audit is undertaken. <i>The findings of MEA allow the community to identify and prioritize EE & RE actions.</i>	Number of energy audits of relevant objects and infrastructures conducted in target sectors.	Comprehensive energy audits in municipal buildings, street lighting and other municipal sectors are not part of normal (regular) practice of the selected community. Neither energy audits of target MABs were conducted.	Comprehensive energy audit of municipal objects and infrastructures, including at least 2 municipal buildings and 5 street lighting systems, as well as at least 9 residential buildings conducted.	Completed audit reports and documents, project reporting.	The actual number of energy audits will depend on the selected community and the number and type of target objects and infrastructures eligible for implementation of the proposed project activities.
A functioning EMS is established. <i>The EMS allows ensuring sustainability of the implemented and better planning of future EE&RE.</i>	Availability of an approved municipal EMS, operated by a designated Municipal Energy Manager (MEM), as well as verified results of monitoring of the outcomes of the Project interventions.	Neither municipal EMS nor a system for monitoring and verification system for EE&RE interventions exists in the selected community.	Functional EMS is formally established in the municipality and managed by a designated skillful MEM (female) trained by the Project. The impact of EE&RE interventions is monitored and verified via EMS.	A decision of the community’s Elders Council on introduction of EMS and designation of MEM, a concept of EMS, monitoring and verification reports, project reporting.	Achievement of this target depends on commitment and political will of the selected community to establish EMS and appoint MEM, as well as availability of municipal resources to set a decent salary to attract a qualified specialist for the position of MEM.
Capacities and knowledge of the local administration staff of the selected community on “green transformation”, including development, financing, implementation and monitoring of EE and LED activities, is built.	Number of capacity building trainings and workshops on “green transformation” organized for local administration staff of the selected community and other stakeholders.	Baseline is to be evaluated and set during the Inception phase of the project implementation.	At least 6 trainings are organized and reported.	Training reports, training effectiveness and participants satisfaction assessment reports, results of post-tests.	Achievement of these targets depends on employee turnover in the local administration of the selected community. Success can be achieved if the trained employees remain in their positions and committed and motivated to contribute to the
	Number of local administration staff and	Baseline is to be evaluated and set during	At least 10 specialists of the local administration		

Project objectives and activities	Indicators	Baseline	Targets End of Project	Source of verification	Assumptions and risks
	specialist of municipal structures covered by the capacity and knowledge building activities of the Project	the Inception phase of the project implementation.	and municipal structures are trained on “green transition”.		objective of “green transformation”.
The designated staff of the selected community (including MEM) is better able to develop and implement municipal EE and LED projects.	Number of technically qualified and bankable EE&RE project proposals developed by the local staff of the municipality.	Baseline is to be evaluated and set during the Inception phase of the project implementation.	At least 3 technically qualified and bankable project proposals (concepts) are developed by local specialists of the selected community and verified by the Project.	Final project proposals approved by the community’s Elders Council, verification reports by the Project, project reporting.	
Awareness raising of the community residents and CSOs on full and inclusive participation in implementation and co-benefits of low-carbon policy is increased.	Number of awareness raising events organized for the residents of the selected community.	Baseline is to be evaluated and set during the Inception phase of the project implementation.	At least 2 public awareness assessment surveys (before and after the awareness raising campaign) are conducted and 4 awareness raising events are organized by the Project.	Report on the survey results, awareness raising event and communication reports developed by the Project.	Achievement of this target depends on the active participation of the local population and CSOs in the Project surveys and events, and on willingness to be engaged in development and implementation of EE and LED policy of the community.
	Number of persons (disaggregated by gender) reached / covered by awareness raising and advocacy measures organized by the Project.	Baseline in % of population of the selected community is to be evaluated and set during the Inception phase of the project implementation.	At least 15% of the residents of the selected community (half of which are women) is reached / covered by the Project events.		
Capacities of local NGOs are enhanced. <i>Knowledge necessary to protect rights of women and socially vulnerable population on equal access to and equitable benefits from low carbon practices is provided.</i>	Number of local NGOs, CSOs and number of their representatives (disaggregated by gender) reached / covered by capacity building events organized by the Project.	Baseline is to be evaluated and set during the Inception phase of the project implementation.	At least 50% of corresponding local NGOs and CSOs and 75% of their staff is reached / covered by the Project capacity building events.	Capacity building event reports, training effectiveness and participants satisfaction assessment reports, etc.	Achievement of this target depends on willingness of local NGOs and CSOs to cooperate with the Project and to apply the knowledge gained in their daily activities.
Financial institutions and private sector actors initiate and get	Community energy efficiency /renewable	Limited involvement of financial and private	At least 3 private sector institutions are offering	Market studies on available financial	Achievement of this goal depends on the enhancement of

Project objectives and activities	Indicators	Baseline	Targets End of Project	Source of verification	Assumptions and risks
involved in wide range of EE / RE initiatives in communities of Armenia	energy projects financing products introduced by financial institutions and private ESCo companies	sector players in MAB and public buildings retrofit activities. Private sector engagement in PV projects financing is significantly higher.	financial products for financing EE retrofit projects in communities of Armenia.	products offered by local financial institutions in the communities of Armenia.	interest towards green products from the demand side, as well as increased affordability of products from the supply side.
Output 2: Energy saving in the public and residential sectors is improved and EE measures are promoted					
EE characteristic of selected public and residential buildings are improved, renewable energy integrated and fuel-change implemented, wherever applicable.	Number of energy retrofitted public and municipal buildings (MABs). Direct energy saving achieved after retrofit activities.	Baseline roughly estimated in the CN is to be evaluated and set during the Inception phase of the project implementation.	At least 2 public buildings and 9 MABs are energy retrofitted. At least 2,230 MWh/year of energy is saved in total after retrofitting activities.	Energy audit, monitoring and field verification reports.	Achievement of this target depends on the number and actual technical characteristics of the target MABs and public buildings, availability of trustworthy baseline information on energy consumption and willingness of tenants of MABs to cooperate and support the proposed interventions. Hence, the mentioned quantitative targets are subject to adjustment based on actual situation evaluated during the first 3 months of the project implementation.
Community streets and outdoor/indoor lighting system EE upgraded.	Length of the street lighting system upgraded by the Project. Direct energy saving achieved after upgrade.	Baseline roughly estimated in the CN is to be evaluated and set during the Inception phase of the project implementation.	At least 12 km of street lighting system is upgraded. At least 150 MWh/a annual energy saving is achieved after the upgrade of the system.	Energy audit, monitoring and field verification reports.	Achievement of this target depends on actual technical characteristics and the level of EE modernization of the street lighting system of the selected community. If by the beginning of the Project most of the street luminaries in the community have already been replaced by LED, the proposed technical solutions and quantitative targets shall be revised and adjusted accordingly.

Project objectives and activities	Indicators	Baseline	Targets End of Project	Source of verification	Assumptions and risks
Output 3: Access to green and affordable energy in the public sector is enhanced					
Solar energy systems (PV and thermal) are deployed in public facilities.	Renewable energy generation reported by the selected community and monitored by the project.	Baseline roughly estimated in the CN is to be evaluated and set during the Inception phase of the project implementation.	At least 385 MWh/a of total annual energy generation by the installed PV and thermal facilities.	Monitoring and field verification reports, electric meter readings, invoices from the distribution grid operator.	Achieving this goal depends on the availability, eligibility and characteristics of the infrastructure (e.g., roofs and lands) proposed for installation of PV and thermal systems, available co-financing and proper O&M of the installed facilities. Hence, the mentioned quantitative targets are subject to adjustment during the first 3 months of the project implementation.
	Number of persons (disaggregated by gender) covered by the Project activities aimed at increasing awareness of residents on energy saving, environmental and other benefits.	Baseline is to be evaluated and set during the Inception phase of the project implementation.	At least 50% of respondents of a survey covering at least 10% of population of the selected community are aware of on energy saving, environmental and other benefits.	EE and RE popularization event reports, results of a survey (including online) conducted by the Project.	