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Project Document template for nationally implemented projects
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Project title: Moldova Sustainable Green Cities – Catalyzing investment in sustainable green cities in the Republic of Moldova using a holistic integrated urban planning approach		
Country: Republic of Moldova	Implementing Partner: Ministry of Environment	Management Arrangements: NIM (National Implementation Modality)
UNDAF/Country Programme Outcome: Outcome 3.2 - Low Emission and Resilient Development: Strengthened national policies and capacities enable climate and disaster resilient, low emission economic development and sustainable consumption		
UNDP Strategic Plan Output: Output 1.4: Scaled up action on climate change adaptation and mitigation cross sectors which is funded and implemented.		
UNDP Social and Environmental Screening Category: Moderate risk	UNDP Gender Marker: GEN 1	
Atlas Project ID/Award ID number: 00097704	Atlas Output ID/Project ID number: 00101330	
UNDP-GEF PIMS ID number: 5492	GEF ID number: 9042	
Planned start date: September 2017	Planned end date: September 2022	
LPAC date: To be determined.		
<p>Brief project description: The objective of the project is to catalyze investments in low carbon green urban development based on integrated urban planning approach by encouraging innovation, participatory planning and partnerships between a variety of public and private sector entities.</p> <p>As a vehicle for this, the project will support the design, launching, and establishment of the Green City Lab to become the leading knowledge management and networking platform, clearing house, an inter-mediator of finance and a source of innovations and expertise to catalyze sustainable low carbon green city development in Moldova with a mission to transform Chisinau and other urban centers in Moldova into modern green and smart European cities with improved quality of life for their citizens, while also demonstrating opportunities for sustainable economic growth. The Green City Lab should be set up as a self-sustaining entity meaning that it will need to operate on a commercial basis, that does not rely on technical assistance funding alone, so that by the end of the project it can continue to operate and to grow. In order to do this, the Green City Lab will need to forge new partnerships and alliances and generate revenues from other sources beyond only this project. The direct global environment benefits of the project are expected to reach at least 200,000 tons of CO_{2eq}, resulting from the concrete pilot/demonstration projects in the building energy efficiency, transport and waste sectors. These are complemented by project’s indirect GHG emission reduction impact at the estimated amount of 2.4 million tons of CO_{2eq} by scaling up, replicating and mainstreaming the project results and activities, including those of the Green City Lab.</p>		

FINANCING PLAN		
GEF Trust Fund <i>or LDCF or SCCF or other vertical fund</i>	USD 2,639,726	
UNDP TRAC resources	USD 80,000	
Cash co-financing to be administered by UNDP	NA	
(1) Total Budget administered by UNDP	USD 2,719,726	
PARALLEL CO-FINANCING <i>(all other co-financing that is not cash co-financing administered by UNDP)</i>		
UNDP	USD 150,000 (in-kind)	
Ministry of Environment	USD 13,700,000 (of which USD 100,000 in-kind)	
Chisinau Municipality	USD 25,500,000 (of which USD 500,000 in-kind)	
Agency for Innovation and Technology Transfer (AITT)	USD 500,000 (cash)	
(2) Total co-financing	USD 39,850,000	
(3) Grand-Total Project Financing (1)+(2)	USD 42,569,726	
SIGNATURES		
Signature: print name below	Agreed by Government	Date/Month/Year:
Signature: print name below	Agreed by Implementing Partner	Date/Month/Year:
Signature: print name below	Agreed by UNDP	Date/Month/Year:

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LIST OF ACRONYMS AND ABBREVIATIONS

AITT	Agency for Innovation and Technology Transfer
CO	UNDP Country Office
CO ₂	Carbon dioxide
CSO	Civil Society Organization
DH	District heating
EBRD	European Bank for Reconstruction and Development
EE	Energy Efficiency
EEA	Energy Efficiency Agency
EEF	Energy Efficiency Fund
EIB	European Investment Bank
EMIS	Energy Management Information System
ESCO	Energy Service Company
ESIA	Environment and Social Impact Assessment
EU	European Union
GCL	Green City Lab
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas(es)
HOA	Home Owner Association
ICT	Information and Communication Technology
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
kt	kilotons
LEDS	Low Emission Development Strategy
LPA	Local Public Authority
MDL	Moldovan Leu (currency)
M&E	Monitoring and Evaluation
MoEnv	Ministry of Environment of Moldova
MoE	Ministry of Economy
MoRDC	Ministry of Regional Development and Construction
MRV	Monitoring, Reporting and Verification
NAMA	Nationally Appropriate Mitigation Action
NGO	Non-Governmental Organization
PIF	Project Implementation Form
PIR	Project Implementation Review
PIU	Project Implementation Unit
POPP	Programme and Operations Policies and Procedures
PPG	Project Preparation Grant
PUC	Public Utility Company
PUG	General Urban Development Plan
RE	Renewable Energy
RTA	UNDP Regional Technical Adviser
SEAP	Sustainable Energy Action Plan
SIDA	Swedish International Development Cooperation Agency
STAP	GEF Scientific Technical Advisory Panel
TA	Technical Assistance
ToC	Theory of Change
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

II. DEVELOPMENT CHALLENGE

1. For the first time in history, more than half of the world's population live in cities and by 2050 this is expected to grow close to 70 %. Cities host most of the world's critical infrastructure, key development assets and major socio-economic activities, which is why their role also in climate change mitigation is critical.
2. As concluded by the IPCC 5th Assessment Report (2014), "Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases (GHGs) are the highest in history". Although not being a major emitter of GHGs in the global or even in the regional context, Moldova's GHG emissions per GDP have remained among the highest in the region thereby indicating considerable, still untapped mitigation potential.
3. In its Intended Nationally Determined Contribution (INDC) submitted to the UNFCCC in September 2015 in prior to the Paris meeting, Moldova committed to reduce its GHG emissions by at least 64% by 2030 compared to the 1990 level and by up to 78% subject to a global agreement addressing access to low-cost financial resources, technology transfer and technical cooperation. The specific measures to reach these targets will be further elaborated in the Low Emission Development Strategy (LEDS) until 2030, which is due to be approved by the end of 2016. Moldova has not yet signed the Paris Agreement, but is preparing for its signature by the end of 2016.
4. The biggest increase in Moldova's GHG emissions both in absolute and relative terms in 2000-2013 took place in the transport sector (1.0 MtCO_{2e} or +117%), followed by the residential sector (0.32 MtCO_{2e} or +29%), and the commercial and public sectors (0.24 MtCO_{2e} or +106%). The final energy use and related GHG emissions is still clearly dominated by the residential sector, however, with a share of over 40%, followed by transport at 22%, industry at 21% and commercial and public services at 11%.
5. While still being the least urbanized European country with over 55% of the population residing in rural areas (as of 2014), the situation is rapidly changing with projected reduction of the share of rural population down to 50% by 2030 and close to 40% by 2050. The inflow of new residents has been particularly strong to Chisinau, not only from the rural areas, but also from other cities across the country. By 2030 Chisinau is expected to host over 50% of all urban population in Moldova putting even more pressure on city's infrastructure and services, while also creating considerable social and environmental challenges. Thus the management of the urbanization and rural-urban migration process has been gaining attention as one of the key national development priorities.
6. Urban residential housing stock currently accounts for about 40% of the total residential floor area. Its energy consumption and climate-related impact is exacerbated due to considerable heat and electricity losses from the distribution grids and the buildings themselves. As of 2013, close to 80% of all residential buildings in urban areas were connected to district heating with heat losses already in distribution estimated at 22% of the total heat supplied. In the transport sector, the development is characterized by the rapid increase in the number of private cars by some 75% between 2005 and 2014, while the number of public transport fleet has remained relatively stable. Municipal solid waste (MSW) management is primarily based on waste disposal on landfills with only limited recycling and practically no waste to energy use.
7. In general, the mechanisms for people to take control and positively influence and manage the urban environment are underdeveloped in Moldova. The role of homeowners associations (HOAs), for instance, has remained weak in managing the residential buildings, thereby leading to problems in implementing required energy efficiency (EE) and other retrofit measures and taking care of the regular maintenance of the buildings and their common areas. Similarly, the participation of the city residents in the development of urban strategies and plans at the general, district, micro-district and/or specific sub-sector level has been practically non-existent with the exemption of some pilot activities initiated under the UNDP Social Innovation Hub¹ project. The broader community engagement into the planning process remains as a challenge, but there are opportunities to develop new, innovative and locally relevant approaches to facilitate this in an integrated and more participatory manner.
8. The differences in gender identities and roles may generate big differences in terms of perceiving the importance of green city development and what is meant by that. As examples, women may have higher awareness on risks associated with urban living environment, they may be more vulnerable to fuel poverty, be more dependent on public transport, while also being affected by and contributing to green city development differently from the behavioral point of view. Such gender differences also need to be taken into account when developing public outreach and community engagement strategies and activities associated with them.

¹ http://www.md.undp.org/content/moldova/en/home/operations/projects/effective_governance/moldova-social-innovation-hub.html

9. Access to affordable financing is a problem for both private and business customers with interest rates around 6-7% for Euro and up to 20% for Leu nominated loans. The domestic banking sector is weak with little widespread understanding on EE and other GHG mitigation projects, related cost-benefit analysis and risk management. Some innovative concepts have been introduced such as Diaspora Bonds using remittances to fund infrastructure investments, but also their use has remained undeveloped.

10. In general, Moldova has remained a difficult place to do business for both domestic and foreign investors. Ranked 52 out of 189 countries in the World Bank 2016 'Doing Business' survey there are significant issues with unjustified and ambiguous regulations, administrative burdens and concerns over non-competitive practice and corruption. While sustainable green low carbon economy can offer business opportunities at a variety of scales with significant opportunities also for the SMEs to generate new jobs and economic growth, the remaining barriers need to be gradually overcome first.

11. The UN Sustainable Development Summit (<https://sustainabledevelopment.un.org/>) in September, 2015 adopted 17 Sustainable Development Goals (SDGs) to establish a basis for the new UN Development Agenda until 2030. Goals such as the SDG 7 "Affordable and Clean Energy", SDG11 "Sustainable Cities and Communities", SDG 12 "Responsible Consumption and Production", SDG 13 "Climate Action" and SDG 16 "Peace, justice and strong institutions" having direct linkages to the project under consideration. Moldova is in the process of 'localizing' SDGs, started by screening the policy, programmes and laws prior to the identification of national indicators.

12. A comprehensive review conducted during the project preparatory phase² indicated that all the sectors relevant to the INDC, LEDS and the SDGs have already developed ambitious sectoral strategies and action plans with further backing by the EU-Moldova Association Agreement aiming at aligning the Moldovan legislation with the core EU energy and environmental legislation. Transforming the objectives and targets into horizontal and vertical policy coherence and budgeting for future actions remains a challenge, however, while all the municipalities in Moldova are also trying to cope in securing their financial balance and satisfy the demand for basic social and other services for their residents. Climate change related concerns in this context are typically considered to be of secondary importance despite a common principal agreement and understanding on the need to develop the cities in both environmentally and economically sustainable way.

13. To effectively support "green" low carbon urban development, there is a need to identify win-win opportunities addressing the primary concerns of municipalities, while also producing tangible GHG reduction benefits. There is a wide and constantly growing spectrum of new technical, institutional and financial solutions available, which can improve the quality and efficiency of public services and create new business and employment opportunities for local communities, while simultaneously contributing to climate change mitigation. The problem is that such new innovations and approaches may never make their way to the actual implementation stage due to different administrative, financial, public perception or other barriers - or simply, because the innovators and possible adopters and beneficiaries of these ideas are not aware of or do not trust each other. There may also be no concrete incentives, venues and initial resources to jointly test and develop such ideas further. Other key barriers are briefly listed below, with further discussion in chapters III and IV:

- Inadequate/outdated regulatory support and enforcement of the strategic goals. To some extent also the primary legislation, but especially the secondary legislation guiding the activities on the ground are typically dragging behind and may remain misaligned with more advanced sectoral strategies and action plans. Also problems with the related enforcement capacity of the public authorities;
- Institutional capacity challenges, overlapping mandates and insufficient coordination mechanisms with limited networking opportunities, lack of trust and recognition of mutual benefits for co-operation and coordinated action between different key stakeholders (inter-ministerial, central vs. local governments and municipalities, CSOs, individual apartment owners and HOAs, private sector and the international financing community);
- Lack of tradition and experience on broad community engagement, public participation and crowd-sourcing in urban planning and development;
- Different capacity, knowledge and public awareness barriers on the latest technical developments and solutions tested in other countries, related lesson learnt and development of the initial ideas into feasible business ideas and investments proposals; and
- Different affordability and financing constrains in leveraging and structuring financing for projects and related new business ideas to support sustainable urban development.

² for further details, see a separate baseline study document)

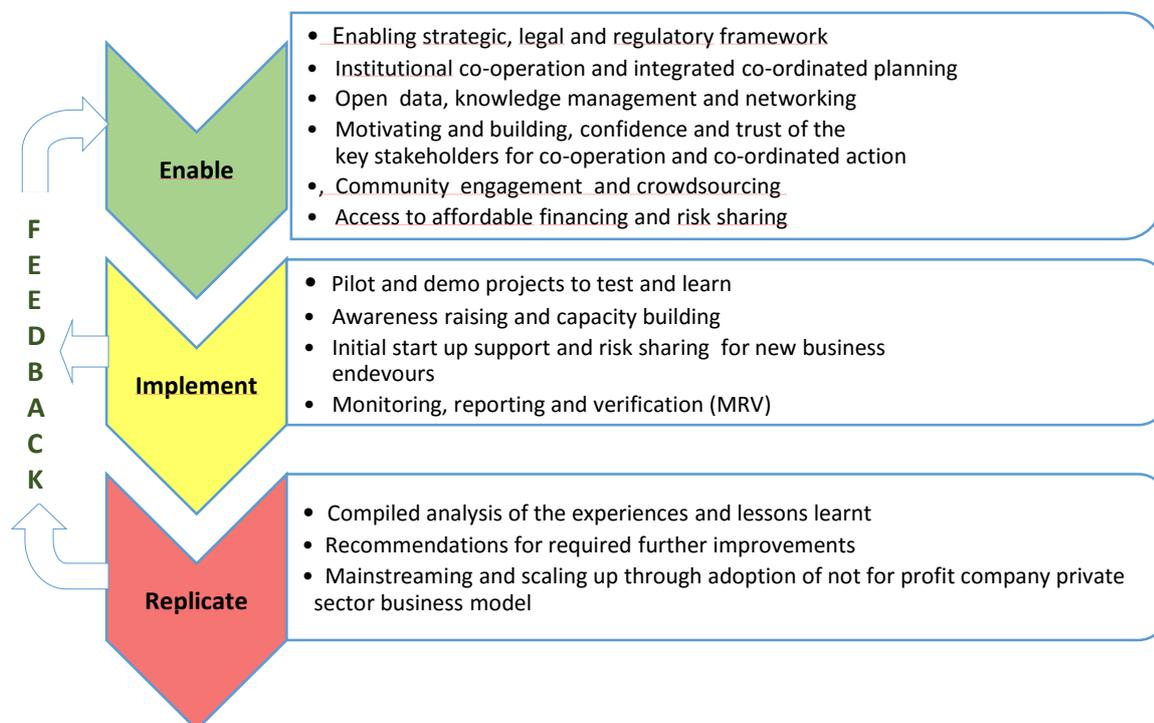
III. STRATEGY

14. The strategy of the project is to create, launch and support a new institutional mechanism called “Green City Lab” (GCL) as a vehicle for encouraging and supporting new innovative measures and approaches in addressing the development challenges and barriers described in the previous chapter. The GCL is aiming at becoming the leading knowledge management and networking platform, clearing house, an inter-mediator of finance and a source of innovations and expertise to catalyze sustainable low carbon green city development in Moldova with a mission to transform Chisinau and other urban centers in Moldova into modern green and smart European cities with improved quality of life for their citizens, while also demonstrating opportunities for sustainable economic growth. By the end of the project, it is aimed that the GCL will be self-sustaining meaning that it will be able to continue to operate and grow without the further need for technical assistance from the project.

15. While started as a Project Implementation Unit, the GCL is expected to grow into a self-sustaining legal entity, managed by an Executive Director, in the form of a public or semi-public institution able to leverage financing for and continue its operation also after the project. In this respect, close co-operation with the key stakeholders of the project, including Chisinau municipality, relevant ministries such as the Ministry of Environment, the Ministry of Economy, the Ministry of Regional Development and Construction and the entities hosted by them, the State Chancellery and other related projects and initiatives such as the UNDP Social Innovation Hub project and the E-Government Center is sought from the very beginning. In addition, the GCL will seek to form strong partnerships with banks and with international financing institutions such as the EBRD, the World Bank, and the EIB. The GCL administrative structure and project exit strategy are discussed in further detail in chapter VIII “Governance and Management Arrangements” and in the draft Business Plan. An executive summary of the draft business plan is enclosed as Annex H.

16. The theory of change (ToC) to address the development challenge, root causes and barriers is structured under three interrelated components illustrated in figure III.1 below. The required support is foreseen to be primarily facilitated by and through the GCL with the aim to support both public and private sector stakeholders to initiate, develop and implement innovative and economically feasible solutions as a response to the development challenges faced and ensure green urban development.

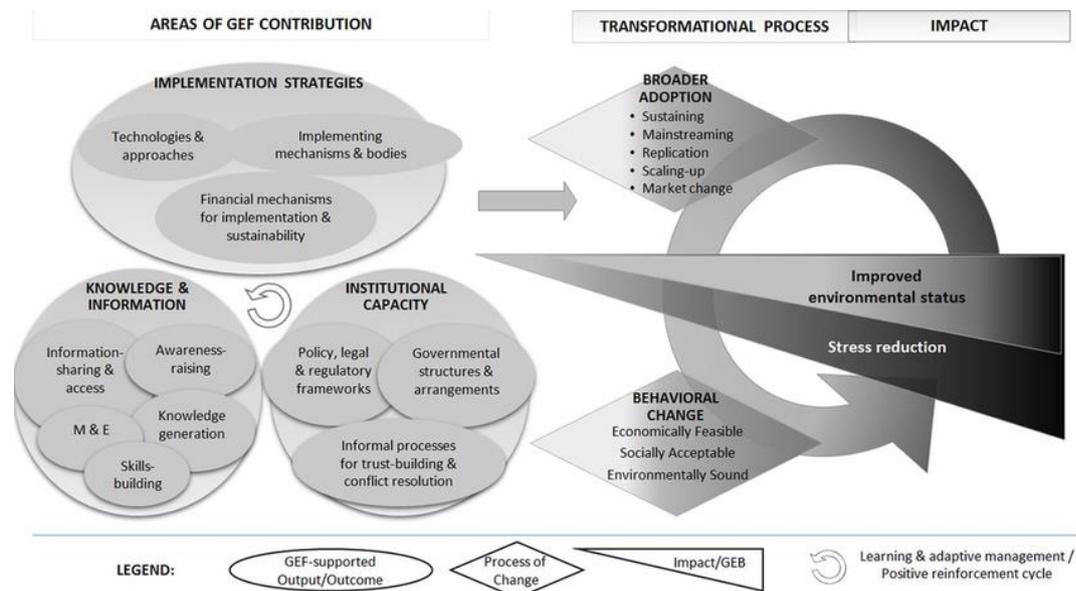
Figure III.1: Simplified illustration of the ToC and the areas to be addressed and supported by the project



17. By a combination of the measures and outputs listed above, the project seeks to contribute to a transformational change of urban planning and development meeting the economic, mobility and social needs of city residents, while also contributing to climate change mitigation and more sustainable and climate resilient cities in general in accordance with the SDGs discussed before. The core elements and the process of supporting

such change can also be illustrated by the General Framework for the GEF Theory of Change developed by the GEF Evaluation Office back in 2012.

Figure III.2 General Framework for the GEF Theory of Change³.



18. While urban sustainability and integrated planning have a variety of definitions and several schools of thought, the EU, for instance, has defined this as “a system of interlinked actions, which seeks to bring about a lasting improvement in the economic, physical, social and environmental conditions of a city or an area within the city.” The key to this process is “integration”, meaning that all policies, strategies and projects are considered in relation to each other. In this regard, the synergies between the elements of the plan should be such that the impact of the plan as a whole adds up to more than would the sum of the individual parts if implemented in isolation.” A crucial component of the integrated approach is its vertical and horizontal integration: vertical in terms of the involvement of the various levels of the government, administration and non-governmental players relevant to urban development; horizontal in terms of integrating and co-ordinating the various sectoral policies and actions of the public, scientific and private sectors for the sustainable improvement of the area. The underlying idea is to reduce friction and conflicts between the different (sectoral) stakeholders and to coordinate sectoral policies, concepts, objectives and action towards a common goal to avoid misleading developments and to make use of synergy effects. This approach is closely linked also to the concept of “Green Urbanism” commonly brought up in the literature⁴.

19. The project design is building on a comprehensive review conducted during the project preparatory phase on the different models and type of innovation centers (referred in the review as ‘iHubs’) established in other countries and on the related experiences and lesson learnt. As concluded by the review, some key elements differentiating the successful initiatives from the less successful ones include:

- **Governance:** Strong leadership is a key element for the success of an iHub - usually based on public-private partnerships and comprising innovative urban policies and redevelopment strategies and flexible, non-continuous development phasing;
- **Connectivity:** Good physical and virtual connectivity is essential for social, institutional and territorial interaction within the area, fostering its integration into the city and the overall city-region. First-class digital infrastructures and bridging elements are two of the distinctive features of these creative places;
- **Clustering environment:** This is associated with the business climate and knowledge infrastructure of the iHub and with the interactions between universities and other research institutions and companies. Best practices point to the presence of good knowledge infrastructures (education and science and technology institutions) in cooperation with companies of creative or soft industries. Building up the local innovation ecosystem is often based upon the "Triple Helix model": Universities and other knowledge-intensive

³ https://www.thegef.org/gef/council_document/evaluation-gef-focal-area-strategies

⁴ For instance: <https://sapiens.revues.org/1057>

institutions create new know-how and build up the knowledge space. Industry and business utilize this new knowledge and develop the innovation space. The public sector acts as an enabler of the innovation environment. The process brings together different actors to brainstorm, discuss, and evaluate proposals. Cooperation between different actors is often informal, but long-term collaboration requires agreements and shared financial efforts. A culture of entrepreneurship is also important;

- *Talent and social environment*: Besides the presence of knowledge and creative workers, the environment tends to be diverse, multicultural and vibrant, with the presence of foreign talents. Hubs mold a community of like-minded innovators and entrepreneurs, but community membership is fluid and passers-through from various strands of life and work are welcomed. It is this flowing and connecting of diverse people and knowledge that is at the heart of the iHub concept. People move easily between companies and from research institutions to business and vice versa. Interactive, dynamic companies are at the core of the ecosystem;
- *Built environment*: A mixed-use environment combining residential, working, learning, shopping and entertainment functions is one of the main characteristics of the iHubs fostering the emergence of a good place to live, work, learn and play. Innovation hubs go out of their way to make people 'bump' into each other, mingle and casually collide as often as possible. Work spaces have an open layout with a modular structure, with furniture that encourages flexible co-working, no assigned work stations, and often a common kitchen for informal interactions. New encounters are further facilitated through networking sessions, informal drinks, common lunches and so on.

20. While sharing some similarities, the concept of an Innovation Hub still takes many forms and can be considered at a number of scales ranging from city wide "smart city" activities to localized regeneration areas or local, regional, national, inter-state and international networks and 'ecosystems' in virtual space.

21. A research project commissioned by Nesta and Bloomberg Philanthropies in 2014 examined a wide variety of government led innovation hubs (which the report named "i-teams") and their relationship to policy. Across a spectrum of activities ranging from public policy and service design, the report identified four key roles of these i-teams: i) *Developers and creators* creating solutions to specific challenges; ii) *Enablers* engaging citizens, non-profits and businesses to find new ideas; iii) *Educators* transforming the processes, skills and culture of the government; and iv) *Architects of Transformational Processes* achieving wider policy and systems change.

22. The report also compiled a number of lessons learnt from the case studies, which may have relevance to the project and the GCL concept in Moldova:

- The type of i-team should be driven by its ultimate goal –whether that is to generate specific solutions, engage citizens, grow innovation capacity in the public sector or encourage system level change;
- Forge strong links to executive power inside government, leveraging internal and external partnerships, resources and insights to achieve goals;
- Build a team with a diverse mix of skills and a combination of insiders and outsiders to government;
- Develop a lean commercial funding model for the team itself and attract secure funds from partners for implementation;
- Continually demonstrate and communicate the i-team's unique value;
- Employ explicit methods, drawing on cutting edge innovation skills and tools, alongside strong project management to get work done;
- Have a bias towards action and rapid experimentation, combining early wins with longer-term impacts;
- Be clear on handovers early on, tasking implementation and delivery to government;
- Relentlessly measure impacts, quantify successes, and be sure to stop what isn't working; and
- Celebrate success and share credit.

23. The project strategy is building on the observations listed above with the aim to have the GCL to act as a facilitator in the following main areas, thereby seeking to address not only environmental, but also the related social challenges such as fuel poverty, social isolation and shortage of new employment opportunities:

- establishing and managing what is to become the leading green/smart city clearing house, platform and venue for knowledge management, participatory planning, co-creation, innovation and partnerships and a source of information and technical expertise in Moldova – supported by cutting edge ICT applications and relying on active partnership building, content management, research and follow up on the latest international developments, while also taking into account the specific development challenges and other framework conditions of Moldovan cities;

- contributing to the general urban development strategies and plans as well as those at the district, micro-district and/or specific sub-sector level by promoting broader community engagement and participation;
- motivating, building the capacity and strengthening the role of home owner associations in managing the residential building stock and their surroundings and supporting the structuring and leveraging financing for the required maintenance and larger retrofit investments;
- providing consultancy and advice and facilitating contacts and partnerships between the public administration, international and national research community, non-governmental entities and individual entrepreneurs, innovators and businesses (including the ICT sector) in the search of new business modalities and employment opportunities in green urban development;
- preparation and implementation of concrete pilot/demo projects with a focus on residential energy efficiency, sustainable mobility and transport and resource efficient waste management based on institutional and financing models that have prospects for larger scale replication and mainstreaming; and
- exploring and applying new approaches for measuring the development impact achieved such as “Randomized Control Trials”, “Citizens’ Scorecards” etc.

24. The success of the GCL at the end of the UNDP/GEF financed activities will be primarily measured by the number of concrete projects facilitated and the direct GHG reduction impact achieved and by its sustainability meaning that at the end of the project the GCL will continue to be operational and able to identify and leverage financing for new green urban development initiatives. The most successful initiatives are foreseen to be scaled up and replicated both in Chisinau and in other cities of Moldova, including eventual establishment of Green City Labs (as sister or daughter entities) also in other locations. Scaling up will happen through forging strong partnerships with a number of key partners throughout Moldova.

25. To have the GCL to continue its work and mission after the project end as a self-standing legal entity with secured financing (as a core element of the project exit strategy), the project first needs to develop a suite of revenue generating services in line with the opportunities and options outlined in the project work plan and the draft GCL business plan and demonstrate their value added to the key project partners, as listed in chapter IV “Results and Partnerships”. To support this, the GCL needs to operate from day one on the principles of: i) transparency; ii) Inclusion; iii) predictability; iv) obligations; and v) sustainability, which are elaborated in further detail below.

26. **Transparency and Public Procurement Law:** As a public or semi-public entity with accounts available for scrutiny, the GCL will operate an ‘open book’ policy in terms of contracts and SLA’s to ensure that partner organizations and clients are aware of the income, profits and operation of this platform. The GCL will offer high standards of conduct in terms of procurement, contractual relationships and the selection of projects. **The GCL will follow all the public procurement standards of the Republic of Moldova which is committed under the 1994 Partnership and Cooperation Agreement to the gradual approximation of its law and policy in regard to public procurement with that of the EU. Some specific actions in this direction have also been agreed under the 2005 EU-Moldova European Neighbourhood Action Plan. Further commitments arise under the CEFTA 2006 Agreement and the Republic of Moldova currently aspires to accession to the WTO Government Procurement Agreement.** The governance mechanisms will be open and the annual reports will be publicized alongside the activities and events programme. The activities of the GCL will be transparent and accessible for as many people as possible.

27. **Inclusion:** The GCL will work with the widest number of stakeholders and ensure that all groups are represented and given a voice. Venues and events will be accessible to all and various communication channels will be used to meet the needs of the wider public. The GCL will engender the principles of inclusion in all of its activities and seek to ensure that protected characteristic groups are considered in decision-making, thereby retaining a positive image, demonstrating its worth to various stakeholder groups and showing the GCL as an exemplar to both domestic and international counterparts.

28. **Predictability:** The work of the CGL will be based on an annual work plan with a cycle of review and performance monitoring. This review will be publicized with a view to ensuring that the public and stakeholders understand the activities of the GCL in the context of public funding and also that the business community perceive it as a credible partner in the long-term.

29. **Obligations:** The GCL will not only require partners to steer, but also to contribute in cash, in-kind or through the exchange of services and expertise. Each of the partners has strengths that can support the work of the GCL and which co-operation arrangements can be confirmed by Memorandum of Understandings. In the long term, to stay resilient, the GCL will draw upon all the partners for support but will retain a wide range of links and relationships to ensure that if support is lost from one quarter the situation can be recovered.

30. Sustainability: At the center of the exit strategy is sustainability. The GCL, while started as a PIU for the Green Cities project, is challenged to transform itself into a self-standing public or semi-public non for profit institution and develop complementary income streams from year 3 onwards so as to reduce its reliance on direct project support and embed itself in the process of enabling green urban development and providing services to public non-public and private entities across sectors. Taking the model of the United Kingdom Carbon Trust that moved from core government support gradually being reduced over time to finding clients and eventually being self-sustaining, the GCL will be seeking partnership agreements with external donors and public authorities, as well as commercial opportunities and income streams from an early stage.

31. Cost benefit analysis of the services to be provided to public and private sectors from end of the third year of GCL activity conducted for next 10 years without project support, has revealed the following picture: (1) Financial IRR is negative, but IRR of the capital is positive and higher than used discount rate. It means that the creation of the GCL without grant support is not feasible, while the estimated co-financing provided by the project partners for the setup of the GCL is enough to create and ensure self-sustainability of the GCL (cash flow is positive). (2) Payback period of capital is 7 years, while payback period of investment is more than 10 years. It means that a non for profit institutional status is more relevant for the GCL. It will not be fully aimed into profit making, while the profit is envisaged to accumulate funds and ensure co-financing for future green urban development projects. It is envisaged, however, that the GCL can also continue to rely on some core public funding based on service level agreements (SLA) to sustain the work of the GCL as a national learning and knowledge platform and also to ensure that this is given a high profile in government decision making.

IV. RESULTS AND PARTNERSHIPS

33. The project objective is to catalyze investments in low carbon green urban development by an integrated urban planning approach and by encouraging innovation, participatory planning and partnerships among and between a variety of public and private sector entities. The means by which this objective will be achieved will be through the design, creation, operation, and sustaining of a nationwide Green City Lab. By this, the project seeks to address several key elements of sustainable urban development such as:

- Good governance with modernization of urban policies, development of integrated urban development plans and methodological guidance as well as establishment of knowledge management and innovation centers as key mechanisms to drive and catalyze investments;
- New innovative approaches and incentives for community and private sector engagement and for leveraging financing, which does not only mean supporting new technical innovations, but “new ways of doing things” by:
 - bringing together subsectors, institutions and experts that have not used to work together before, including support by an international coaching team to be established and contracted at the outset of project operations to provide capacity building support and training and which may consist of both corporate and individual expert services;
 - integrating urban infrastructure, global and local environmental and social development needs; and
 - New and innovative institutional set-ups, implementation and financing modalities.
- Technology transfer and “leapfrogging”

34. The direct global environment benefits of the project are expected to reach at least 200,000 tons of CO_{2eq}, resulting from projects facilitated by the UNDP/GEF project in the building, transport and waste sectors. These are complemented by project’s consequential (former “indirect”) GHG reduction impact at the estimated amount of 2.4 million tons CO_{2eq}, by scaling up, replication and mainstreaming the project results over the impact period of 10 years after the project end and considering a causality factor of 40%. A reference is made to Annex F for more detailed calculations.

35. The specific outcomes and outputs of the projects will consist of three key outcomes as follows:

Outcome 1: Fully operational and sustainable Green City Lab recognized by the key stakeholders as the leading innovation, knowledge management and networking platform and a source of expertise for catalyzing sustainable low carbon green city development in Moldova with secured funding to continue its operation after the UNDP/GEF project closure.

As already explained in chapter III, the Green City Lab will be initially established as a PIU for the project, but with an aim to transform itself at the mid-term of project implementation into a self-standing legal entity (in the form of a public or semi-public institution) with gradually reduced direct financial support of the GEF resources. Once established, the roles of the GCL executive director and the project manager will also be separated so as to avoid any conflicts of interest. The GCL Executive Director will be appointed by the Board of the GCL and should be appointed during the second year of project operations at the very latest. The Project Manager will be appointed by UNDP in accordance with UNDP rules and procedures so once the GCL is formally established there will be one Executive Director and one Project Manager. Prior to the existence of the GCL, the Project Manager will perform the role of the Executive Director of the GCL on an ‘interim basis’.

The main outputs contributing to outcome 1 will consist of the following:

- Updated and strengthened Business Plan for the Green City Lab (GCL), building upon the draft business plan prepared during the PPG phase, which clearly outlines and defines the route to sustainability of the GCL and provides a clear description of the business model and how the GCL will earn fees and grow;
- Shareholders Agreement, Articles of Association, GCL Board Composition terms of reference, and terms of reference for all GCL positions all prepared and ready;
- Adequately equipped initial Green City Lab/PIU in operation with carefully selected staff within the premises suited for the envisaged functions of the Lab, including common workspace, meeting room(s) and other networking facilities accessible also for other actors affiliated with and/or interested in green city development such as CSOs, HOAs, individual experts, researchers and consultants, emerging start-up companies and others;

- A comprehensive on-line and regularly updated open data, knowledge management and networking platform and clearing house for green city development providing a basis for project's public outreach, community engagement, capacity and partnership building activities;
- As a part of the of the above, an on-line network/roster of local and international green city experts and expert institutions with advanced search functions to serve partnership building and compilation of highly qualified expert teams to work with particular green city challenges and subprojects based on their areas of expertise and qualifications (CVs, references) that can be accessed and reviewed through the application;
- Concluded partnership and co-operation agreements with the key stakeholders, including city authorities, relevant line ministries, public utility companies, academic and other research and educational entities, expert associations and other CSOs, home-owner associations, private sector companies, local and international financing entities and other ongoing projects as well as international experts and expert institutions, some of which may also become a part of GCL's international advisory and coaching team.
- Developing/adapting and taking into use complementary ICT solutions to support integrated and participatory planning, crowd-sourcing, impact monitoring and broad community engagement;
- Establishment of cross-sectoral green city / urban task forces consisting of a variety of key stakeholders from public and private sector for the three main areas the project is seeking to influence, namely i) urban land use and mobility planning; ii) energy efficient housing and related public utility services; and iii) resource efficient waste management. The task forces shall review and, as applicable, contribute to the revision of the current urban plans and sectoral development strategies (or those under development) as well as to support the design and selection of the first pilot/demonstration projects to be supported under project outcome 2;
- A series of innovation events, seminars, workshops, "hackathons", green city "jam sessions" and others on project related topics and subsectors from where the ideas generated may also qualify for follow-up financing, for instance, under the Fast Track challenge program under Outcome 2;
- Further development of national design codes and/or related guidance documents to simplify the process of and empower the private sector and communities to develop projects contributing to green city development; and
- Development of a suite of services for and enhanced capacity and references of the Green City Lab to deliver these services for fee paying customers by relying on the resources of both the GCL core team and the network of its co-operating experts and partner institutions included in its Roster of Experts. These services may include energy audits, design and delivery of training courses for homeowners associations (HOA) and municipal service providers, surveys and public outreach events and campaigns, various project management, procurement, design and financial structuring services, project impact monitoring, reporting and verification and others – subject to not jeopardizing the reaching of the other targets of the project during its implementation, however. The revenues from these suite of services are expected to generate at least \$200,000 per annum in fees by the end of the project in order that the GCL can continue to operate and to grow. Initially, it is envisaged that the GCL should initially have around seven staff but this number can grow as the GCL secures additional clients and earns additional fees.
- A target of at least 1 formal cooperation agreement signed by the GCL prior to the mid-term review of the project and at least 5 formal agreements worth at least \$500,000 USD (does not include any agreement with this project) and annual revenues of \$200,000/year by the end of the project signed by the GCL with various clients;

Outcome 2: Successfully completed pilot/demonstration projects facilitated by the GCL with related monitoring, reporting and verification of the results in the areas of: i) integrated and participatory urban land use and mobility planning; ii) residential building energy efficiency and renewable energy use; iii) low carbon mobility; and iv) resource efficient waste management. For examples on the type of projects that can be supported under outcome 2 and on their complementarity to the current baseline projects, a reference is made to Annex G "Selected baseline initiatives, lessons learned and incrementality of GEF support".

The main outputs contributing to outcome 2 are foreseen to consist of the following:

- Finalized design and agreed implementation and financing arrangements of the first pilot/demonstration projects, including full-fledged monitoring, reporting and verification (MRV) plan for the achieved results and financing plans that include a maximum of a 20% investment technical assistance for any one individual green urban development project with at least one demonstration project in each area (minimum of 4 projects) - For more information on the planned demonstration projects see Annex G;

- Outputs from an integrated and participatory land use and transport planning process incorporated into the urban land use and transport plans currently under preparation or to be initiated during project implementation;
- Completed construction and launching of the first pilot/demonstration investment projects; and
- “Fast Track” challenge program(s) by building on the general model of challenge programs implemented in other countries to offer technical assistance in the range of few thousands of USD (the exact amounts be specified later as a part of developing the challenges) for new and innovative complementary solutions contributing to low carbon green city development and which can be brought to implementation quickly and at modest costs. Among other GCL initiatives to encourage broad community engagement and participation, this will be an essential complementary tool to support the development of small innovative and visible initiatives at a community level and secure their early buy-in.

While the projects supported under the Fast Track challenge program(s) are not subject to any predefined co-financing requirements (to be assessed on a case by case basis), for larger investment projects the share of the GEF grant is limited to max. 20% of the total investment or up to USD 10 per ton of CO_{2eq} reduced, whichever comes first. For further details on the total allocated funds for each category of investments, a reference is made to the chapter IX “Financial Planning and Management”. Other criteria in project selection would be that the projects supported directly by GEF funding can together generate direct GHG emission reduction of at least 100 ktons of CO_{2eq} over the calculation period of 20 years and all of them can present an adequate MRV plan in the project design. The detailed eligibility and evaluation criteria for the invited proposals will be developed during project implementation as a part of the public call preparation.

Further examples and options for Green City demonstration projects to be considered and evaluated further at the initial project implementation stage by the GCL and the envisaged project partners is presented in Annex G “Selected baseline initiatives, lessons learned and incrementality of GEF support, incl. examples and options for pilot/demonstration projects to be supported”. More information about these demonstration projects can be found in Annex G to this document. It is envisaged that the support for demonstration project will be managed in line with UNDP Policy on micro-grants. Under the Micro-capital grants policy an individual micro-capital grant may not exceed \$150,000. A recipient organization may receive multiple grants provided the grants do not exceed on a cumulative basis \$300,000 within the same programme or project. The demonstration projects will be implemented in such a way as so as to provide a fee to the Green City Lab for the successful implementation of the demonstration projects. This will provide a strong incentive to the Green City Lab to ensure that the projects are actually successfully carried out.

Outcome 3: Knowledge management and M&E to facilitate learning, scaling up and replication of project results.

Monitored and evaluated overall results of the project and lessons learnt with compiled KM materials, recommendations for the removal of the identified complementary barriers, including institutional and regulatory improvements, and related public outreach and TA to scale up, replicate and mainstream the project results. Beside the standard UNDP M&E procedures and requirements (for further details see section VII), some particular outputs in this respect under outcome 3 will consist of:

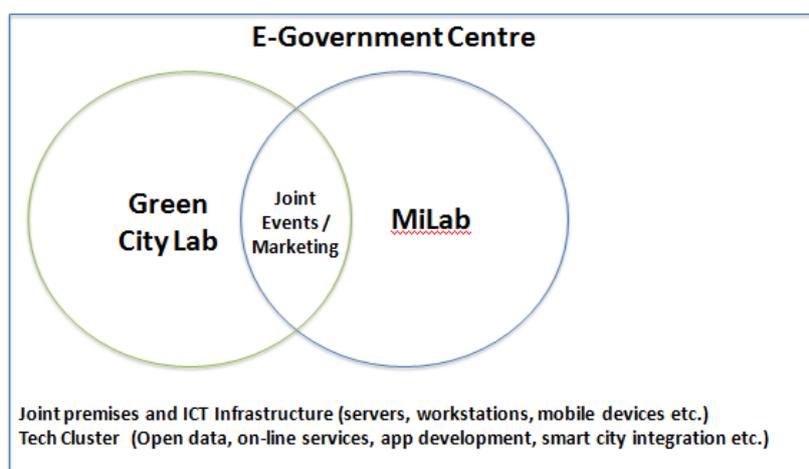
- Annual MRV reports on the implemented pilot/demonstration projects (incl. “Fast Track” challenge projects) and the results achieved, including surveys and analysis of the experience of the final beneficiaries and service users and related lessons learnt. By accepting that the actual GHG emission reductions from the “fast track challenge projects” can be lower and/or more difficult to monitor than for bigger investments, adequate MRV arrangements will also be required from these small projects and are requested to be outlined in the applications at a level adjusted to the type and size of each challenge;
- A comprehensive on-line and regularly updated open data, knowledge management and networking platform and clearing house for green city development providing a basis for project’s public outreach, community engagement, capacity and partnership building activities and with institutional arrangements and agreements in place to continue its operation also after the project;
- With an agreed group of buildings and selected public utility services and in co-operation with the Energy Efficiency Agency, Climate Change Office and local public authorities, piloting an on-line energy management and monitoring system (incl. GHG emission inventories) by building on the experiences and, as applicable, software used by the UNDP/GEF supported Energy Management Information System (EMIS) projects in other countries;

- An end of the project “lessons learnt” report and recommendations for follow up such as required institutional and regulatory improvements, financial and fiscal incentives and other support mechanisms to effectively boost integrated participatory planning and investments on low carbon green city development in Chisinau and other communities in Moldova; and
- At least two international public outreach and knowledge management workshops or seminars, one in the mid-term and one in the end after the project mid-term and terminal evaluations, respectively.

Partnerships and Stakeholder Engagement

36. Recognizing the close links with the ongoing UNDP Social Innovation Hub (MiLab) project, working under the auspices of the E-Government Center and the State Chancellery, the GCL will initially be established as a Project Implementation Unit working alongside these bodies with the opportunity for shared services and co-location. The Green City Lab will work in close collaboration with both the E-Government Center and the MiLab for improving open data access, organizing events and developing integrated technological and ICT solutions to facilitate innovation and participatory planning as a part of the urban planning and management process. The Social Innovation Hub has already been successfully engaged in some co-designing projects, such as the redesign of a local police station, which concept could be scaled up to citywide design activities.

Figure IV.1 Foreseen collaboration between the Green City Lab, UNDP Social Innovation Hub (MiLab) and E-Government Center



37. The E-Government Center (www.egov.md) is a not for profit public institution established by the State Chancellery of Moldova and supported by the World Bank funding with an objective to improve the governance by applying new information and communication technologies (ICT). The Center has rolled out ICT infrastructure for a range of public services of the central government such as digital signature, e-visa, e-payments and data exchange platform (M-cloud). The available ICT infrastructure could be used for municipal services as well, e.g. e-payments for parking, public transport ticketing etc. The Social Innovation Hub hosted by the E-government and funded by UNDP facilitates interaction between state and municipal entities for re-design of public services, essentially providing a platform for trying new approaches to solving social issues. As such, both entities complement well the planned activities of the Green City Lab.

38. In the light of synergies and opportunities for co-operation both during and after project implementation, the project will also work closely with other UNDP implemented projects in Moldova, including the GEF funded “Transforming the Market for Urban Energy Efficiency in Moldova by introducing Energy Service Companies”, the EU funded “Moldova Energy and Biomass” and the “Low Emission Capacity Building” projects (the latter supporting, in particular, the establishment of adequate MRV frameworks and preparation of NAMAs), the “Chisinau Municipality Project” to support and enhance the capacities for participatory policy making and planning and the Regional UNDP project “Increasing Urban Resilience by use of ICT for Mainstreaming Disaster and Climate Risk Reduction in Armenia, FYR Macedonia and Moldova (ICT for urban resilience)”.

39. The Municipality of Chisinau as a main project beneficiary is expected to contribute to the project implementation both financially and otherwise, while also expecting to benefit from the project activities in line with the co-financing letter presented as an annex to this project document. At the start of the project, the City of Chisinau will select one staff member who will be seconded full-time to the Green City Lab for a period of one year (renewable) to work alongside the Project Manager. At the end of this one year, the City will replace this individual with another City Staff member of renew the agreement for a second year. Other secondments may

also be considered from the City of Chisinau or other partners. Once the GCL is established as a separate legal entity the secondees will either return to their host organization or leave the Municipality and negotiate and agree commercial terms to join the GCL. In terms of interacting with the city planning, possible entry points to the planned General Urban Plan (PUG) updating could include: i) support for the elaboration of the PUG and Zonal Plans in terms of providing the participatory planning platform and ensuring that the principles of GUD are integrated into this, in line with the guidance provided by the UNDP ESCO Project; ii) elaboration of a Green Infrastructure Strategy and Management Plan as an early deliverable to engage the public and CSOs and provide a valuable supporting study in the ongoing elaboration of the PUG; iii) development of an exemplar pilot neighborhood to demonstrate green innovative approaches to integrated urban planning and social innovation in terms of good management; and iv) development of a Green Design Code to inform the implementation of projects as a regulation within the PUG and to inform the updating of other construction norms (SNIPs) managed by the Ministry of Regional Development and Construction. This can be complemented by facilitating and supporting the initiation and development of specific measures contributing to the actual implementation of the PUG. As it concerns the staff resources, the members of the Green City Lab team are envisaged to work in close co-operation with the municipal departments and experts engaged in city planning and investment preparation, while the municipality, on the other hand, may decide to second some of their staff to work within the Green City Lab for the areas of common interest, thereby facilitating mutual learning and exchange of information.

40. The State Chancellery is coordinating the development of national policies and strategies, whilst also working to ensure inter-ministry collaboration. As the entity already hosting the e-Government Center and the UNDP Social Innovation Hub (MiLab) project and by not being directly guided by the strict sectoral interest of Government's line ministries, the State Chancellery will act as the Government Co-operating Agency to support the project implementation and ensure adequate co-ordination with other related initiatives. The established ICT cluster around the E-Government Center and MiLab will provide the infrastructure to support the Smart City strands of the Green City Lab whilst also providing behavioral insights and data management services facilitating participatory planning and the development of spatial databases and GIS systems. The State Chancellery may also have premises in the City Centre that would be suitable for co-location with the E-Governance Centre and the MiLab project including a co-creation space and office accommodation.

41. The Ministry of the Environment (MoEnv) is the central public administration authority responsible for the development and promotion of state policies and strategies in the area of environment protection and climate change. It is the GEF and UNFCCC national focal point leading the process of national adaptation and mitigation and is also the Implementing Partner for this project. The MoEnv has plans to establish a new green environmental information center in Chisinau by a hybrid new-build and refurbishment project to become a headquarter and meeting venue for the Ministry itself as well as for a cluster of agencies and bodies working in the environmental field. The plans also include common space for the city residents and CSOs to meet and work and as such become a part of a wider green and smart city cluster linked to the GCL.

42. The Ministry of the Economy (MoE) develops and implements legal and regulatory framework and promotes state policy in the field of energy efficiency and renewable energy, electricity, heat and natural gas, as well as the implementation of energy efficiency and renewable energy projects. The Minister of Economy is one of the three deputy prime ministers with mandate to coordinate the activity of the Ministry of Regional Development and Construction, Ministry of Agriculture and Food Industry, Ministry of Transportation and Roads Infrastructure, Ministry of Environment, National Bureau of Statistics and a number of other public authorities.

43. The Energy Efficiency Agency (EEA) is the national administrative authority subordinate to the Ministry of Economy. Among its other duties, the EEA is responsible for: i) implementation of the state policy in the field of energy efficiency and renewable energy; ii) monitoring of EE and RE programs and action plans and related projects and programs implemented in Moldova; and iii) creating and managing a database on EE and RE. Due to its impact on public finances, public buildings have been prioritized by the EEA for the development as the first module. Supported by the GIZ, EEA has collected data for over 4,000 public buildings (out of a total of 7,000) from three development regions (North, South and Centre). The GIS-based database is incorporated in the platform of Geoportal Data Base (www.geoportal.md). In partnership with Innogate, the EEA has also established the Chisinau Sustainable Energy Information Centre (CSEIC) within its premises. As such, the EEA is a natural project partner when it concerns any EE and RE related initiatives as well as for the introduction of EMIS under component 3.

44. The Energy Efficiency Fund (EEF) was established in 2010 for identification, evaluation and financing of EE and RE projects. The EEF is administered by the Management Board comprised of nine representatives from Ministry of Economy, Ministry of Finances, Ministry of Environment, Ministry of Regional Development and Construction (one each) and 5 from the private sector and international donors. Annual allocation of funds to

EEF from the state budget is proposed by the Ministry of Economy, subject to the approval by the Management Board of the EEF. The EEF is currently going through a legal reform process aiming at to be transformed into a revolving, rather than continuing as a depleting, fund. Subject to continuing its operation, the EEF can be seen as one of the key financing sources for any energy efficiency related projects initiated or developed by the Green City Lab.

45. As partners to the project, the MoE and its affiliates EEA and EEF can provide expertise and access to funding for renewable energy and energy efficiency projects and complement the other funding streams. Close links that the UNDP ESCO project has developed with the MoE, EEA and EEF will also be further exploited.

46. The Ministry or Regional Development and Construction (MoRDC) develops and promotes state policies in spatial and urban planning, architecture, construction, production of construction materials, housing and regional development. While the responsibility for local urban planning and implementation lies with the respective local authorities, MoRDC is the key national counterpart in the area of designing and coordinating the implementation of spatial and urban planning regulations, which ultimately define the shape and form of urban master plans. The opportunity lies in feeding the innovations identified, developed and piloted by the Green City Lab into the process of updating national standards. Therefore, and by using the Green City Lab as a test-bed for new initiatives, it is essential to fully integrate such initiatives into the work of the MoRDC as the lead entity in charge for national standards and norms. Furthermore, MoRDC is responsible for implementation of the national regional development strategy through the Regional Development Funds (RDF).

47. According to the Law on Regional Development, Chisinau Municipality is considered as a separate Development Region. Consequently, and according to the Law provisions, the applicable regional development institutions and bodies are to be created, including a Regional Development Agency (RDA) and a Regional Development Council (RDC). Establishment of these entities is also considered as a prerequisite to access the Regional Development Fund (RDF, currently 1% of the national budget), but until now this has repeatedly failed. Should the situation change during project implementation, the RDF could be considered as one of the primary sources of funding the project may try leverage for the proposed green city investments and other activities.

48. National Council for Architecture and Urban Development (NCAUD) was set up in 2008 by the MoRDC with a mandate to coordinate and provide advice in the field of urban development and spatial planning. The Council is composed by experts from various public bodies dealing with construction, urban development, culture, tourism as well as from the Academy of Sciences and design companies. The work of NCAUD primarily focuses on the design of “buildings of national importance” and “national spatial development plan”. The mandate and status of the NCAUD has been suggested to be updated to become a National Council on Sustainable Urban Development, which process could be supported also by the UNDP/GEF project.

49. Licensed urban design companies (e.g. Urban Project, Chisinau Project, Institute of Urban Development etc). These companies are the primary sources of expertise for spatial and urban planning in the country. Their engagement in the project activities and integrated sustainable urban planning by “learning-by-doing” will support the institutionalization of the approaches promoted.

50. The Technical University of Moldova (TUM) deals with a number of topics associated with Green City development. The TUM is envisaged to co-operate with the Green City Lab in knowledge management, research and innovation, including working together with graduate and post-graduate students, for instance, in the frame of traineeships, providing topics for these preparation and facilitating international contacts and exchange of information. A new university curriculum using Chisinau and/or other municipalities as a living laboratory could also be developed with further learning and exchange opportunities with the leading and emerging smart cities elsewhere in Europe. The Vienna Technical University, for instance, could be seen as a potential partner for this. Partnerships will also be encouraged with other EU universities, eventually under the EU ‘Horizon 2020’ programme.

51. The Agency for Innovation and Technology Transfer (AITT) is a public institution founded in 2004 with the main objective to coordinate, stimulate and implement the mechanisms of innovation and technology transfer in Moldova in four strategic areas: i) materials, technologies and innovative products; ii) energy efficiency; iii) health; and medicine and biotechnologies on the cost sharing basis with a 50% state grant and 50% beneficiaries own contribution. With links to the EU Horizon 2020 program, the AITT is also managing and operating innovation and IT incubators. At the moment, Moldova is hosting 3 Science and Technology Parks and 8 Innovation Incubators. Of direct relevance to the Green City project is the ‘Portal Corporativ ACADEMICA’ which is providing assistance to a number of companies in the EE and RE sectors and which could both serve and benefit from the related activities of the Green City Lab.

52. The AITT is also acting as the local counterpart agency for the regional “Development Through Land Use Planning Project” (DETLUP) funded by the International Visegrad Fund with an objective to improve the knowledge base and skills of local and regional authorities, NGOs and designers in urban planning in Georgia, Moldova and Ukraine by building on the experience of the so called Visegrad (or V4) Group consisting of Czech Republic, Hungary, Poland and Slovakia. As such, it could provide useful support also to the process of elaborating the new Green Urban Development Plan (PUG) for Chisinau. The project will be implemented from 2015 until 2017.

53. Innovation in Moldova is promoted and protected by the law “Code on Science and Innovation”, adopted in 2004. It covers a variety of issues such as science and innovation policies making by the government, the role and status of the Academy of Sciences, accreditation of research organizations, definition and protection of intellectual property rights (IPR), information policy on science and innovation, and on generated results, legal status of organizations in science and innovation, and information about the status of researchers. The Code also directed 1% of the GDP into research and development, but in practice this has remained at around 0.2%.

54. The role of the Home Owner Associations (HOA) was already briefly discussed in chapter II. Strengthening their role in the building management and required EE and other retrofits would obviously be critical, while also being a very challenging undertaking, thereby corresponding to the situation in most other transitional economies. In the core project team, one person is suggested to focus on the building energy efficiency only, including close co-operation with the HOAs, relevant public authorities and project financiers in an effort to: i) find implementation, institutional and financing models and, in particular, concrete incentives for building residents to recognize and strengthen the role of the HOAs in building management; ii) generate income and secure financing for the required investments and maintenance works; and iii) contribute, to the extent feasible, to the design and self-management of the surrounding communal areas and spaces. In this context, it is also essential to further study the examples, initiatives and lessons learnt in other countries (including other current or previous transitional economies) *vis a vis* the specific framework conditions in Moldova and facilitate public access to such consolidated information through the project’s KM platform.

55. There are also several international financing institutions active in Moldova, to which the initial concept of the Green City Lab was presented during the project preparatory phase and with whom eventual collaboration has been discussed in the frame of, for instance, the following activities:

56. The European Bank for Reconstruction and Development (EBRD) has funded a variety of projects with direct relationship to the work scope of the GCL. The EBRD is in the process of developing ‘Green City Action Plans’ and has expressed interest in the GCL to be a mechanism by which these could be developed by having strong synergy with the proposed Zonal Plans. On the lending side, EBRD has financed street rehabilitation, public transport and waste projects in Chisinau as well as district heating and public transport (trolley busses) projects in Balti. EBRD has provided financing for energy efficiency projects also under the Moldovan Sustainable Energy Financing Facility Extension (MoSEFF II) and the Moldovan Residential Energy Efficiency Financing Facility (“MoREEFF”), the financing opportunities and criteria will be taken into account, when developing investment project ideas by the GCL. In particular, the EBRD is also developing two large new regional projects (which include Moldova) for financing through the Green Climate Fund. One of the projects is focused specifically on green urban development and therefore the project will seek to cooperate very closely with this initiative. The project and the GCL will explore closely how it can work with the EBRD.

57. The European Investment Bank (EIB) in co-operation with the EBRD is currently preparing a framework loan to support sustainable Energy Efficiency Improvements in Chisinau (Moldova). The project is embedded into a long-term investment program aiming at addressing the refurbishment of both public and residential buildings. The first component of the pilot phase currently under development will focus exclusively on public buildings, while the second component (subject to the outcome of the feasibility study), will target both public and residential buildings. The total costs of the pilot phase are expected to be in the range 25 million Euros, consisting of an EIB loan (c.a. EUR 10 million), EBRD loan (c.a. EUR 10 million) and potentially an E5P grant (c.a. EUR 5 million). The project is to be implemented by the municipality of Chisinau with support of a Project Implementation/Management Unit. The next, so called “roll-out phase” is not defined yet, but is expected to consist of extending the financing far beyond the EUR 25 million on municipal and residential projects. The project and the GCL will explore closely how it can work with the EIB.

58. Beside the thermal refurbishment of buildings, EIB also considers lending to a waste management program worth around EUR 100 million. The program will comprise projects aimed at upgrading and developing solid waste management systems and facilities in eight regions of Moldova, in line with Moldova’s Waste Management Strategy 2013-2027. The eight regional waste management projects will be prepared by EIB and two bilateral cooperation programs. The projects will provide new regional sanitary landfills and possibly also

residual waste treatment facilities for all the urban population and part of the rural population in Moldova and is expected to reach around 3 million inhabitants. Together with upgrades of waste collection systems and introduction of separate collection and treatment of recyclable materials and bio-waste, the projects will reduce adverse environmental, health and climate impacts from current dumpsites that will be closed and rehabilitated. These projects can also be considered as potential financing sources for the resource efficient waste management initiatives of the GFC, which is why close contacts are foreseen to be established with the mentioned EIB teams.

59. As it concerns the activities supported by the World Bank (WB) in Moldova, especially the following activities are to be noted in the light of collaboration opportunities with the Green City Lab: i) the Local Service Development Loan seeking to mainstream the engagement of citizens, supporting the establishment and co-operation of the e-Governance Center and as well improved public transport services; and ii) the District Heating Efficiency Improvement Project with an objective to contribute to improved operational efficiency and financial viability of the Chisinau district heating company with a direct link to the building energy efficiency subcomponent of the UNDP/GEF Green Cities project. Much of the technical assistance activities of the World Bank's and other donors' energy related activities have been supported by the Swedish International Development Cooperation Agency (SIDA). Consultations with SIDA for exploring the co-operation opportunities were started at the project development stage and expected to be continued during its actual implementation.

60. Despite there being several civil society organizations (CSOs) in Moldova, their role in general has remained weak in terms of influencing and delivering environmental interventions and initiatives. In the last three years, only 25% of the CSOs have delivered concrete projects. The topics and areas have included education and training (50%), social services (40.8%), community development (36.9%), civic and advocacy (26.2%), health and youth (19.25% each), and culture (16.9%). A recent report funded by the EU identified significant barriers to the development of CSOs both in their operating environment and the projects they undertake citing a lack of implementation and respect for adopted laws despite strong constitutional support for the CSOs. In Transnistria CSOs are particularly weak and suffer from harassment and are ignored by the authorities. Legislative frameworks are in place for CSOs to operate as public entities, although this remains underdeveloped.

61. In the project related areas, CSOs such as IDIS "Viitorul", Ecological Movement of Moldova and Expert-Grup have experience in promotion of community mobilization around a common vision of local development, participation of women and vulnerable groups in local development, undertaking research and studies in the areas of sustainable urban development, sustainable mobility, energy efficiency etc. These capacities are also sought to be leveraged by the proposed project for revision of the legislative and regulatory framework, participatory urban planning and community engagement, among the others.

62. Private sector companies will be actively engaged by the Green City Lab as a part of its outreach, project sourcing and incubation activities. At the moment, private sector cooperation with the Municipality of Chisinau appears to be limited primarily to the transportation (mini-bus operators) and waste management (ABS Ltd. plastics recycling) sectors. The Green City Lab will work with the private sector to develop the green economy by supporting new market entrants by business incubation, attracting international companies to Moldova and improving the image of the sector through quality control and the development of a panel of approved suppliers and installers. The availability of new green technologies will be highlighted and showcased alongside the development of home grown innovations to solve locally specific problems and respond to opportunities.

63. Finally, the project is looking forward to benefit from co-operation with the GEF funded Sustainable Cities Integrated Approach Pilot program and methodology, which is an ambitious attempt to promote integration of environmental sustainability in city planning and management initiatives. By investing US\$1.5 billion over five years, initially engaging 23 cities in 11 developing countries (Brazil, China, Cote d'Ivoire, India, Malaysia, Mexico, Paraguay, Peru, Senegal, South Africa and Viet Nam), the program seeks to:

- Facilitate knowledge-sharing among city leaders on policy reform and innovation to inform and inspire climate action - the Global Knowledge Platform will provide access to cutting-edge tools for countries and cities to pursue aspirations for creating smart and sustainable cities of the future;
- Developing and deploying common standards and tools, that will help enhance credibility, transparency and usability of cities' commitments for environmental sustainability and GHG reductions;
- Enhance the capacity of city leaders to develop and execute city-wide low-carbon plans; and
- Provide finance for selected urban low-carbon infrastructure projects across a range of sectors such as transport, energy, buildings, waste and water.

64. While no cities and countries with economies in transition from Europe is included among this GEF Pilot program, the staff of the Moldova Green Cities project shall closely follow the progress of this global program and absorb the guidance, materials and lessons learnt into the implementation of the Moldova project, when applicable. This also applies to the KM platform sought to be established and hosted by the Moldova Green City Lab, which will be linked to the tools, materials and networking opportunities of the KM platform of the global project. Contacts with the mentioned GEF program have already been established during the project preparatory phase with further details on this to be found from the Response to the STAP comments attached to the CEO Endorsement Request.

Mainstreaming gender

65. The urban development challenges and responses to them may affect women and men differently and can bring along a range of gender-positive impacts either accidentally or by paying specific attention to this from the very beginning. The urban environment and infrastructure in terms of access to affordable and good quality housing and public utility services, public transport, safety, social contacts, employment opportunities and the required time for taking care of the specific responsibilities and family needs is typically having several gender-specific implications, the type and level of which depends on the typical roles and position the men *vis a vis* women have in the targeted households, societies and communities. For fuel poverty in Moldova, for instance, the UNDP Household Data Survey of 2013 indicated that the impact is highest among the groups that already have a high poverty rate also otherwise such as women living alone.

66. A gender perspective needs to and will be taken into account as an essential element when elaborating project's public outreach and communication strategy. Women's groups may be specifically targeted by and used for some knowledge transfer activities, while also taking into account eventual gender differences on which information sources are primarily used and trusted. In all its public outreach and knowledge transfer activities, the project seeks to ensure that it will equally reach and benefit both male and female city residents.

67. At development of strategies, operation procedures, staffing, allocation of resources and decision making the project seeks to make sure that both sexes are represented equally. In the case the impact on women is less visible or women face larger exclusion and harsher conditions, the interventions and actions need to be designed in such a way that they can target these group as a priority.

68. Female entrepreneurs will be specifically encouraged to benefit from the project support in line with the Women's Green Business Initiative⁵ designed to ensure that efforts to promote greener, more resilient, and sustainable societies are successful from an economic, environmental and social perspective, including through a greater focus on gender equality and women's empowerment. Capacity development with an objective to increase the number of women for particular professions such as technicians, construction workers and operators contributing to green city development and where they currently may be underrepresented can be considered. Specific attention may also be given for co-operating and establishing partnerships with CSOs promoting gender equality in Moldova and/or formulating challenges calling for new and innovative proposals addressing these aspects in particular.

69. In relation to project's MRV related activities, the project will insist on provision of gender disaggregated data in accordance with the gender specific or gender disaggregated indicators included into the project results framework. In addition, it will be important to show the impact of different green city initiatives on women and men and to take this into account in project's public awareness campaigns. When it comes to the actual investments, the project will develop gender-sensitive criteria and each of the programs should elaborate on their impact on both women and men. Possible examples of gender-specific activities may include: energy efficient lightening systems to contribute to a safer environment for women as well as looking at possible improvements in public transportation both in terms of using electric buses and looking at the alternative routes that would match the specific needs of women such as bus stops close to the kindergartens and schools, the main grocery stores and green markets etc.

70. By the measures above, the project seeks to advance gender equality and empower women as agents of change and leaders in the development processes that shape their lives, thereby contributing to the mission of the UNDP Gender Equality Strategy 2014-2017. Based on the feedback received from project's M&E activities the given gender marker will be reassessed at a regular basis (e.g. once a year) with required corrective action, as needed.

⁵ http://www.undp.org/content/undp/en/home/librarypage/environment-energy/climate_change/gender/womens-green-business-initiative.html

South-South and Triangular Cooperation (SSTrC)

71. The operational guidelines on UN support to South-South and triangular cooperation defines South-South cooperation (SSC) to be “a process whereby two or more developing countries pursue their individual and/or shared national capacity development objectives through exchanges of knowledge, skills, resources and technical know-how, and through regional and interregional collective actions, including partnerships involving Governments, regional organizations, civil society, academia and the private sector, for their individual and/or mutual benefit within and across regions. South-South cooperation is not a substitute for, but rather a complement to, North-South cooperation”.

72. This approach is fully aligned with the project strategy to invest heavily to open data access, knowledge management, networking and partnership building not only between the Moldovan expert institutions, but also at the regional and the international level. In the management of the residential housing stock, for instance, all the transitional economies have inherited similar type of problems and challenges, which is why the approaches tested and proven successful in other transitional economies can be more interesting and useful than models and approaches used for building EE retrofits in countries, where the HOAs, for instance, are already well established and where the affordability constrains are significantly smaller.

V. FEASIBILITY

Cost efficiency and effectiveness

73. By taking into account the development challenges and barriers listed in section II and by building on a comprehensive review of several international green and smart city initiatives with the main conclusions and lesson learnt discussed in section III of this project document, the establishment of the Green City Lab in the proposed form with the potential to grow into a self sustaining entity towards the end of the project was concluded to be the most cost-effective approach for starting to overcome the identified challenges and barriers.

74. With the focus on open and improved access to data, effective public outreach and smart use of available ICT technologies in sharing and managing knowledge and information as well as by introducing competitive elements such as public calls and challenge programs for attracting new and innovative proposals for the available investment support and mainstreaming the awarded solutions for more comprehensive financing programs, the project seeks ensure the most cost-effective use of the GEF resources.

75. It is also in the core of the project strategy to invest in effective partnership building and co-ordination of the project activities with those of the other entities so as to build on and benefit from the comparative strengths of each partner entity and not duplicate the efforts. An example of this approach is to partner with the eGovernment Centre and the UNDP Social Innovation Hub with a goal that much of the ICT related expertise and support for the Green City Lab and the project in general could be obtained from there, while also having an opportunity to organize joint events, host co-locations etc. Similarly with planning related components, UNDP has agreed to co-operate closely with the EBRD “Green City Action Plans” initiative, while for any energy related activities, the Green City Lab shall work together with the Energy Efficiency Agency and its partner entities.

76. During the project preparatory phase, several options and scenarios for the establishment of the Green City Lab were explored from the viewpoint of ensuring its efficiency and sustainability. These options together with their pros and cons are discussed in further detail in the draft business plan. By building on this preparatory work, it was concluded that a stepwise approach starting the operations of the GCL as a Project Implementation Unit by building on the successful model of the UNDP Social Innovation Hub project and closely co-operating with this Hub in the areas of common interest would have the best chances to ensure effective start up and delivery of the anticipated project results during the first two years of the project implementation, while also gaining more experience on working with different state and municipal entities on the basis of concrete activities. Another model that will be explored more closely once the project starts is the model in the UK used to set up the Carbon Trust. The Carbon Trust was initially established in the UK in 2001 with Government Funding as a non-for profit company. The Government Funding was gradually withdrawn over time and the Carbon Trust now operates much more on a commercial basis to implement low carbon projects in the UK and internationally. By building on the results of these initial steps as well as by taking into account eventual political and organisational changes that may take place after project document finalisation, UNDP and the Project Board will decide whether as a part of the project exit strategy, the GCL shall be transformed into a state or municipal owned public institution, merged with another public entity or eventually continue its operations as a CSO. Regardless of the option chosen, the GCL will need to operate on a commercial basis. It can not and will not be able to rely only on the funds from this project for its operation. The main criteria in choosing between these options at the mid-term of project implementation shall be based on the consideration of the ability of the GCL to: i) continue its agile and effective delivery of services without an overwhelming internal bureaucracy; ii) attract financing from a variety of sources and contract modalities to sustain its operations after the project closure ; iii) not be directly affected by eventual future organisational or political changes within its main public partner entity; and iv) pay adequately attractive salaries and provide career opportunities and a working environment, which can attract the most talented people to work for the GCL, while also having full transparency in its operations, for instance, by hiring and rewarding staff based only on their results and capacity to deliver and effectively contribute to the required team work.

77. Throughout the project implementation, the project and the GCL management shall maintain primary attention on other ongoing and planned initiatives and actively explore possible synergies and opportunities for co-ordination and co-operation so as to proceed with fully complementary rather than overlapping activities. The related consultations with key public authorities, other donors and financing entities have already been initiated during the project preparatory phase and are to be continued throughout the implementation in combination with required adaptive management, thereby seeking to ensure the most cost-effective and results oriented use of the GEF resources assigned for the project. The experiences and lessons learnt presented in chapter III of this project document are also to be considered in this context.

78. While the projects supported under the Fast Track challenge program are not subject to any predefined co-financing requirements, for larger investment projects the share of the GEF grant is limited to max. 20% of the total investment or up to USD 10 per ton of CO_{2eq} reduced, whichever comes first so as, on the one hand, support cost effective and feasible projects requiring only modest GEF support to overcome the initial risks and financing barriers with good prospects for replication without further GEF support and, on the other hand, avoid “wasting” of GEF resources for oversubsidizing projects that may be attractive enough even on their own.

79. The combined direct and consequential (former “indirect”) GHG emission reduction resulting from the supported activities have been estimated at about 2.6 million tons of CO_{2eq}, thereby resulting overall GHG reduction costs of less than USD 1.1 per ton of CO_{2eq} for the GEF funds spent.

Risk Management

80. As per standard UNDP requirements, the Project Manager will monitor risks quarterly and report on the status of the risks to the UNDP Country Office. The UNDP Country Office will record progress in the UNDP ATLAS risk log. Risks will be reported as critical when the impact and probability are high (i.e. when impact is rated as 5, and when impact is rated as 4 and probability is rated at 3 or higher). Management responses to critical risks will also be reported to the GEF in the annual PIR.

Project risks					
Description	Type	Impact & Probability from 1 (low) to 5 (high)	Mitigation Measures	Owner	Status
The Green City Lab fails to establish itself as a self-sustaining entity and raise funding for new projects after the end of the GEF grant support	Operational	I = 4 P = 2	Careful selection of the staff of the core project team emphasizing the required qualifications to develop the GCL towards an entity that becomes a leading expert institution in Moldova to deliver green urban development services and generate adequate revenue stream to sustain its operations and making sure that the legal status and institutional set-up of the GCL supports this target.	Project Board	
The foreseen co-operation and co-financing arrangements with the key project partners fail to materialize	Political	I = 4 P = 2	By building on the consultations of the project preparatory phase and the obtained co-financing letters: i) active follow up with key project partners to discuss about the commitments made; ii) reflecting and reacting to the eventually changing circumstances with appropriate adaptive management actions and; iii) as required, identify potential new partners and co-financing sources and adjust the project activities accordingly.	Project Board	
Targeted project beneficiaries don't have the financial resources or credit worthiness to invest i.e. a risk that the project develops a wish list of investments with no follow-up in terms of actual investments.	Financial	I = 4 P = 2	This risk is mitigated by a number funding mechanisms currently available in Moldova to support CSUD related projects. Strong focus of the project on awareness raising, coaching and capacity building and on identifying win-win opportunities not addressing only CC mitigation, but supporting local economic development in general by reducing public expenditures and generating new business and employment opportunities should further mitigate this risk.	Project Team	
Other key stakeholders such as Home Owner Associations cannot be motivated and incentivized to strengthen their role in	Organisational	I = 3 P = 3	Strong focus on awareness raising, coaching and capacity building and on identifying win-win opportunities not addressing only climate change mitigation. Working with the public administration on supporting regulatory framework and identifying, in consultation with the HOA representatives, financing	Project team	

green urban development.			modalities and incentive schemes that can be considered as attractive and affordable enough for the building residents to invest in building management and retrofits.		
Due to technical failure of the equipment and/or software used, the trust of the key stakeholders and investors on the proposed solution(s) is lost.	Technology	I = 3 P=2	Given the eventual innovative nature of some green urban development measures, this risk is present, but is sought to be mitigated by adequate pretesting and by largely relying on technologies that are already well known and tested in other countries. For any ICT applications, adequate emphasis also needs to be put on the network safety and data protection	Project team	
The proposed technologies and retrofit measures may generate waste that has detrimental environmental or health impacts.	Environmental	I=3 P=2	Such waste may be generated, for instance, in building EE retrofits, including materials commonly used earlier such as asbestos. The project will mitigate this risk by having as an obligatory component for all proposed and supported projects an environmental impact assessment - not necessarily a full-fledged, but of a scale corresponding to the type and size of the project.	Project team	
Overlapping project activities with other donor funded projects leading to duplication, inefficient use of resources and “donor fatigue” of the targeted beneficiaries.	Organisational	I = 3 P = 2	Adequate stakeholder consultations with other donors both during the project preparatory and continuing throughout the implementation, so as to define and proceed with fully complementary rather than overlapping activities	Project Board + project manager	
Inadequate and/or non-capacitated human resources of the project team to successfully implement the project by adaptive management and support the mainstreaming of its results.	Operational	I = 5 P = 3	Recruitment of the key project staff based on competitive selection procedures emphasizing the qualifications and requirements set up in the ToR. Effective planning and day-to-day monitoring of the progress towards the set targets to complement the regular annual monitoring, including the use of international expert support to backstop and build up the local capacity for adaptive management and mainstreaming the project results when and as needed. Efficient and results oriented “back-office” support of UNDP to facilitate smooth implementation of, for instance, any procurement related activities and the general oversight of project implementation.	Project Board + RTA	
Climate change risks	Environmental	I = 3 P = 2	The potential detrimental impacts of climate change to be fully taken into account in all urban planning related activities and the design and assessment of the related pilot/demonstration projects with applicable and adequate response / risk mitigation measures included into those plans and projects including helping to ensure that climate change resilience considerations are fully taken into account.	Project Team	

Social and environmental safeguards

81. The project has gone through the UNDP Social and Environmental Screening. While the project is rated as a moderate risk, the expected demonstration projects under the second component will be small in scale, temporary and uncomplicated. Thus, the expected social and environmental risks could be managed through appropriate management measures identified in the screening matrix (Annex F). Once the project is initiated and should the risks be severe in term of impact, the additional ESIA will be commenced in accordance with the national legal framework for impact assessment.

Sustainability and Scaling Up

82. To great extent, the aspects of sustainability and scaling up have already been addressed in the previous sections and are integrated into the main project targets with the idea to have the Green City Lab to evolve into a sustainable, national resource that will support the development of green cities across Moldova based on a

learning by doing approach and be the interface between local communities, government, funders, local and international expertise and global networks.

83. The overarching exit strategy is to develop the services of the GCL from day one as something that can become revenue generating services later on. Although sought to be transformed from a PIU into a public or semi-public institution, the GCL is expected to deploy private sector like approaches to income generation, staff utilization, business development and robust management. Each GCL staff member is expected to develop the business and be involved in the evolution of the GCL into a trading organization and shall be empowered to take responsibility for their own projects, client relationships and further business development. The built in marketing and communications function will not only promote the activities of the GCL around green urban development, targeted at citizens, businesses and stakeholders, but shall also be engaged in promoting the GCL as an organization to potential clients and funders. Using a combination of public sector values and private sector acumen, the GCL will approach contracts in a fair and open way, being clear about fee structures and the destination of any surplus to support its mandate and mission.

84. In order to meet the set targets, the importance of selecting the right people to work in the GCL from the very beginning obviously belongs to the most critical undertaking, the importance of which cannot be overemphasized. In particular, when evaluating candidates for the managerial positions, their past experience and qualifications for running “business like” endeavors need to be highlighted and, as needed, the search continued if suitable candidates cannot be found by the first round of applications. During the implementation, the GCF staff also needs to have access to complementary training and an opportunity to learn from the operation and management of similar entities in other countries. The GCL legal status must allow it to operate in a manner similarly to a not-for profit company or other similar modality that allows for the provision and marketing of its services for a fee to both the public and private sector so it will be important for GCL staff to visit other countries where similar initiatives have been undertaken so they can learn the approach that needs to be undertaken.

85. As it concerns the replication, scaling up and mainstreaming of the supported pilot/demo projects initiated and supported by the GCL, it is essential that they:

- are not over-subsidized, but are selected on the basis of an adequate economic and financial analysis reflecting the realistic financing opportunities of the key project partners also after the project;
 - are more in the need of initial risk sharing than buying down the cost to become economically and financially feasible in general;
 - do not focus on technical demonstrations only, but on testing and demonstrating, in particular, such institutional and financial modalities that can be applied after the GEF support also on their own;
 - include accurate monitoring, verification and reporting of the results based on real measured and verified data, so as to facilitate their credible use in further public outreach and replication efforts; and
 - are complemented by adequate flanking measures to raise awareness on the results achieved and the win-win nature of the measures implemented as well as to enhance capacities of key stakeholders to facilitate further replication, scaling-up and mainstreaming of the supported projects and measures.
- Provide the GCL with a results-based fee in order that it encourages the GCL to undertake further projects.

86. While among its other activities, the GCL is also envisaged to support the updating of the General Urban Plan of Chisinau Municipality as well as to work with the EBRD on the development of Green City Action Plans, due emphasis will be put on ensuring that the financial resources invested in this won't jeopardize the other targets of the GCL operations and that support will only be provided for such activities and subcomponents, which are aligned with the GCL core functions to support community engagement and integrated participatory planning. Also trying to make sure that any activities and subcomponents within these plans supported by the project will have a fair chance to be also implemented.

87. Finally, it is essential that the entire project team throughout the project implementation will proactively explore and establish new partnership and co-operate and consult with the key partners and stakeholders already identified, so as to adjust the project activities to their anticipated future financing trends and priorities as well as trying to influence these priorities by themselves.

Economic and/or financial analysis

88. A financial analysis to sustain the Green City Lab is included in the draft business plan with initial budget allocations to cover the GCL staff and other operating costs shown in chapters IX and X of this project document. As it concerns any investment related activities, the selection of the specific pilot/demonstration projects will

be done only during project implementation and, therefore, an economic and financial analysis is not applicable at this stage. Such an analysis is required, however, from every project applying for a GEF grant, including those submitted for the Fast Track program in the case of generating revenues of some kind and on the basis of which, the size of the GEF grant can be adjusted.

VI. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s): SDG 13: Take urgent action to combat climate change and its impacts, SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable

This project will contribute to the following country outcome included in the UNDAF/Country Programme Document: Outcome 3.2 - National policies and strengthened capacities enable climate and disaster resilient, low emission economic development and sustainable consumption. **Outcome indicator:** Share of renewable energy in the gross domestic consumption; **Baseline:**5%

This project will be linked to the following output of the UNDP Strategic Plan:

Output 1.3: Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste.

Output 1.4: Scaled up action on climate change adaptation and mitigation cross sectors which is funded and implemented.

Output 1.5: Inclusive and sustainable solutions adopted to achieve increased energy efficiency and universal modern energy access (especially off-grid sources of renewable energy)

Output 2.5: Legal and regulatory frameworks, policies and institutions enabled to ensure the conservation, sustainable use, and access and benefit sharing of natural resources, biodiversity and ecosystems, in line with international conventions and national legislation.

	Objective and Outcome Indicators	Baseline ⁶	Mid-term Target ⁷	End of Project Target	Assumptions ⁸
Project Objective: To catalyze investments in low carbon green urban development by an integrated urban planning approach and by encouraging innovation, participatory planning and partnerships with a variety of public and private sector entities.	<i>Mandatory Indicator 1:</i> Extent to which climate finance is being accessed (IRRF 1.4.1 a)	0	At least USD 2 million leveraged for investments directly initiated or supported by the GCL	At least USD 10 million leveraged for investments directly initiated or supported by the GCL	The projects initiated by the GCL meet the criteria of the targeted financiers
	<i>Mandatory indicator 2:</i> Number of direct project beneficiaries with gender disaggregated data.	0	5,000 people, from whom not more than 60% for the same gender	20,000 people, from whom not more than 60% for the same gender	The project MRV mechanism is collecting also gender specific data
	<i>Indicator 3:</i> Direct GHG emission reduction impact of the project	0	20 ktons of CO _{2eq} calculated over a 20 year lifetime of the investment	200 ktons of CO _{2eq} calculated over 20 year lifetime of the investment	Successfully completed pilot/demo projects with adequate MRV in place
Component/Outcome⁹ 1: Fully operational Green City Lab recognized by the key stakeholders as the leading innovation, knowledge management and networking platform which is profitable and a source of expertise for catalyzing sustainable low carbon green city development in Moldova with secured funding to continue	<i>Indicator 4:</i> Status of the GCL and the specific outputs under Outcome 1 to support its operations	0	Business Plan for the GCL is finalized and agreed and implemented. The GCL established as a self-standing public or semi-public institution (prior to the mid-term review) with a shareholders agreement, articles of association, a Board, and an Executive Director appointed by the Board, with all the outputs of its work plan under Outcome 1 (see Annex A)	The GCL established as a self-standing public or semi-public institution with all the outputs of the attached work plan under Outcome 1 completed. The GCL must be able to continue operations and to grow as it has alternative sources of revenue outside of the project and it should have at least 5 clients, each generating revenues of \$40,000 per annum or more	The required co-financing and other contributions for the GCL establishment and operationalization are materializing. Additional clients (at least 5) and fees (at least \$200,000 per annum) are secured and revenue is generated. There are at least 7 GCL staff who do not need to be laid off due to the project closing as the GCL will have other clients and fees to continue operating.

⁶ Baseline, mid-term and end of project target levels must be expressed in the same neutral unit of analysis as the corresponding indicator. Baseline is the current/original status or condition and need to be quantified. The baseline must be established before the project document is submitted to the GEF for final approval. The baseline values will be used to measure the success of the project through implementation monitoring and evaluation.

⁷ Target is the change in the baseline value that will be achieved by the mid-term review and then again by the terminal evaluation.

⁸ Risks must be outlined in the Feasibility section of this project document.

⁹ Outcomes are short to medium term results that the project makes a contribution towards, and that are designed to help achieve the longer term objective. Achievement of outcomes will be influenced both by project outputs and additional factors that may be outside the direct control of the project.

its operation also after the UNDP/GEF project closure.			completed or being at an advance stage of implementation.	meaning that the GCL should have revenues of at least \$200,000 per annum by the end of the project.	
	<i>Indicator 5:</i> Number of partnerships for green city development established in the frame of jointly implemented and/or developed projects and measures with gender disaggregated data, as applicable.	0	At least 1 formal co-operation agreements in the frame of jointly developed and/or implemented projects or other initiatives with at least one public or private entities, of which not more than 70% managed by the same gender.	At least 5 formal co-operation agreements in the frame of jointly developed and/or implemented projects or other initiatives with at least 10 public or private entities, of which not more than 70% managed by the same gender.	It is assumed that the GCL is operating before the mid-term review with an Executive Director appointed and is able to enter into the first formal cooperation agreement prior to the mid-term review.
	<i>Indicator 6:</i> Value of signed contracts / agreements not funded by GEF resources for covering the GCL operational costs	0	First non-GEF funded contract or agreement signed by the GCL by the time of the mid-term review by which the GCL will offer a 'fee for services' contract to the client in return for design and implementation of green urban development strategies	At least 5 or more signed non-GEF funded contracts or agreements at the combined value of at least USD 500,000 to enable GCL to continue its financially sustainable operation after the end of the project. The GCL shall have a target of annual revenues of \$200,000 per annum by the end of the project, not including fees that are earned from the project itself. This should be broken down into the GCL having at least 5 clients who pay at least \$40,000 USD per annum each.	The GCL shall aim to have signed contracts worth at least \$500,000 or more by the end of the project and to have annual revenues of at least \$200,000 per annum by the end of the project. The GCL legal status must allow it to operate in a manner similarly to a not-for profit company or other similar modality that allows for the provision and marketing of its services for a fee to both the public and private sector as well as its participation in public and private sector procurement calls already during the implementation of the UNDP/GEF project.
Component/ Outcome 2: Successfully completed pilot/demonstration projects with related monitoring, reporting and verification of the results in the areas of: i) integrated and participatory urban land use and mobility planning; ii) residential building energy efficiency and renewable energy use; iii) low carbon mobility; and iv) resource efficient waste management.	<i>Indicator 7:</i> The extent, to which integrated and participatory planning methodologies are taken into use in updating the Chisinau General Urban Development Plan (PUG) and related zonal plans, including gender disaggregated data on the number stakeholders engaged into the process.	Although guideline for green urban planning has been developed with support of UNDP-GEF ESCO project, General Urban Development Plan	The GCL team and the Chisinau Municipality working together for updating the PUG based on an integrated participatory approach with specific outputs completed on time, as outlined in the project work plan and having a balance participation of both male and female stakeholders without a single gender exceeding a share of 60%	At least one zonal plan finalized based on an integrated and participatory planning methodology suggested by the Green City Lab and having a balance participation of both male and female stakeholders without a single gender exceeding a share of 60%.	Formal co-operation agreement between the GCL and Chisinau municipality for the development of the PUG based on an integrated participatory approach completed with adequate details of implementation.

		for Chisinau is outdated			
	<i>Indicator 8:</i> Status of the pilot/demo projects for each of the targeted subsectors	Baseline to be developed after selection of demonstration projects	The design and financing decisions completed for at least one pilot/demo project from each targeted subsector with a potential to collectively meet the direct GHG reduction target of the project	Completed construction of at least one pilot/demo project from each targeted subsector (i.e – at least 4 projects in total) with MRV data on the achieved GHG savings for at least one year operating period.	Agreements on the required institutional, implementation and co-financing arrangements
	Indicator 9: Number of projects supported by the “Fast Track Challenge Program” with monitored gender disaggregated data on project beneficiaries and their contribution to supporting gender equality.	NA	At least 3 projects with monitored, verified and reported data, as applicable, on the achieved GHG savings, of which at least 1 project having also a strong positive impact on supporting gender equality	At least 10 projects with monitored, verified and reported data, as applicable, on the achieved GHG savings, of which at least 3 projects having also a strong positive impact on supporting gender equality	The challenge program and prizes can be made attractive enough for the targeted participants to attract good quality proposals.
Component/ Outcome 3: Monitoring and Evaluation, knowledge management and replication of project results.	<i>Indicator 10:</i> Status of the Project MRV system and quality of the data delivered by that	No project related MRV system in place	A MRV system for emissions reductions resulting from project activities in place and reporting verified data from all activities. Introduction of EMIS with open data access for selected public (and as applicable) residential buildings, PUCs and other agreed objects.	An established MRV system (including EMIS) with open data access and institutional arrangements and agreements in place to continue with data reporting also after the project on all the supported pilot projects and other selected GHG emission sources within the City.	Required co-operation agreements with project owners, Chisinau municipality and, as applicable, with Energy Efficiency Agency for the introduction of the project MRV system and EMIS with open data access in place.
	<i>Indicator 11:</i> Agreed knowledge management (KM) products and events delivered	0	The virtual Green City KM platform established At least one international Green City KM event (workshop or seminar) organized	The Green City KM platform sustained after the project A lessons learnt report finalized An international end of the project workshop organized	
	<i>Indicator 12:</i> Number of Eols received for replicating the project intervention strategy, specific technical solutions or business models for new projects and/or municipalities	0	0		At least one new municipality and 5 project proponents expressing interest to replicate one or more of the supported interventions.

VII. MONITORING AND EVALUATION (M&E) PLAN

89. The project results as outlined in the project results framework will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results. Supported by component/outcome three: Knowledge Management and M&E, the project monitoring and evaluation plan will also facilitate learning and ensure knowledge is shared and widely disseminated to support the scaling up and replication of project results

90. Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the [UNDPPOPP](#) and [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. Additional mandatory GEF-specific M&E requirements (as outlined below) will be undertaken in accordance with the [GEF M&E policy](#) and other relevant GEF policies¹⁰.

91. In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report. This will include the exact role of project target groups and other stakeholders in project M&E activities including the GEF Operational Focal Point and national/regional institutes assigned to undertake project monitoring. The GEF Operational Focal Point will strive to ensure consistency in the approach taken to the GEF-specific M&E requirements (notably the GEF Tracking Tools) across all GEF-financed projects in the country. This could be achieved for example by using one national institute to complete the GEF Tracking Tools for all GEF-financed projects in the country, including projects supported by other GEF Agencies.¹¹

M&E Oversight and monitoring responsibilities:

92. Project Manager: The Project Manager is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Manager will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Manager will inform the Project Board, the UNDP Country Office and the UNDP-GEF RTA of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted. The Project Manager will be responsible for the timely establishment of the Green Climate Lab (GCL).

93. The Project Manager will develop annual work plans based on the multi-year work plan included in Annex A, including annual output targets to support the efficient implementation of the project. The Project Manager will ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for evidence-based reporting in the GEF PIR, and that the monitoring of risks and the various plans/strategies developed to support project implementation (e.g. gender strategy, KM strategy etc..) occur on a regular basis. The project manager will provide quarterly narrative and financial progress reports. This quarterly progress reports will be prepared following guidelines provided by the UNDP country office and UNDP-GEF regional coordination unit.

94. Project Board: The Project Board will take corrective action as needed to ensure the project achieves the desired results. The Project Board will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project's final year, the Project Board will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

95. Project Implementing Partner: The Implementing Partner is responsible for providing any and all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary and appropriate. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes, and is aligned with national systems so that the data used by and generated by the project supports national systems.

96. UNDP Country Office: The UNDP Country Office will support the Project Manager as needed, including through annual supervision missions. The annual supervision missions will take place according to the schedule outlined in

¹⁰ See https://www.thegef.org/gef/policies_guidelines

¹¹ See https://www.thegef.org/gef/gef_agencies

the annual work plan. Supervision mission reports will be circulated to the project team and Project Board within one month of the mission. The UNDP Country Office will initiate and organize key GEF M&E activities including the annual GEF PIR, the independent mid-term review and the independent terminal evaluation. The UNDP Country Office will also ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality.

97. The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the [UNDP POPP](#). This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed, and monitored and reported using UNDP corporate systems; the regular updating of the ATLAS risk log; and, the updating of the UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the GEF PIR and the UNDP ROAR. Any quality concerns flagged during these M&E activities (e.g. annual GEF PIR quality assessment ratings) must be addressed by the UNDP Country Office and the Project Manager.

98. The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure in order to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GEF Independent Evaluation Office (IEO).

99. UNDP-GEF Unit: Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Directorate as needed.

100. **Audit**: The project will be audited according to UNDP Financial Regulations and Rules and applicable audit policies on NIM implemented projects.¹²

Additional GEF monitoring and reporting requirements:

101. Inception Workshop and Report: A project inception workshop will be held within two months after the project document has been signed by all relevant parties to, amongst others:

- a) Re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project strategy and implementation;
- b) Discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms;
- c) Review the results framework and finalize the indicators, means of verification and monitoring plan;
- d) Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP in M&E;
- e) Update and review responsibilities for monitoring the various project plans and strategies, including the risk log; Environmental and Social Management Plan and other safeguard requirements; the gender strategy; the knowledge management strategy, and other relevant strategies;
- f) Review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and
- g) Plan and schedule Project Board meetings and finalize the first year annual work plan.

102. The Project Manager will prepare the inception report no later than one month after the inception workshop. The inception report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Board.

103. GEF Project Implementation Report (PIR): The Project Manager, the UNDP Country Office, and the UNDP-GEF Regional Technical Advisor will provide objective input to the annual GEF PIR covering the reporting period July (previous year) to June (current year) for each year of project implementation. The Project Manager will ensure that the indicators included in the project results framework are monitored annually in advance of the PIR submission deadline so that progress can be reported in the PIR. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR.

104. The PIR submitted to the GEF will be shared with the Project Board. The UNDP Country Office will coordinate the input of the GEF Operational Focal Point and other stakeholders to the PIR as appropriate. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

¹² See guidance here: <https://info.undp.org/global/popp/frm/pages/financial-management-and-execution-modalities.aspx>

105. Lessons learned and knowledge generation: Results from the project will be disseminated within and beyond the project intervention area through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to the project. The project will identify, analyse and share lessons learned that might be beneficial to the design and implementation of similar projects and disseminate these lessons widely. There will be continuous information exchange between this project and other projects of similar focus in the same country, region and globally.

106. GEF Focal Area Tracking Tools: The following GEF Tracking Tool(s) will be used to monitor global environmental benefit results: Tracking Tool for GEF 6 Climate Change Mitigation Projects. The baseline/CEO Endorsement GEF Focal Area Tracking Tool(s) – submitted as Annex D to this project document – will be updated by the Project Manager/Team (not the evaluation consultants hired to undertake the MTR or the TE) and shared with the mid-term review consultants and terminal evaluation consultants before the required review/evaluation missions take place. The updated GEF Tracking Tool(s) will be submitted to the GEF along with the completed Mid-term Review report and Terminal Evaluation report.

107. Independent Mid-term Review (MTR): An independent mid-term review process will begin after the second PIR has been submitted to the GEF, and the MTR report will be submitted to the GEF in the same year as the 3rd PIR. The MTR findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the MTR report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the [UNDP Evaluation Resource Center \(ERC\)](#). As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final MTR report will be available in English and will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and approved by the Project Board.

108. Terminal Evaluation (TE): An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terminal evaluation process will begin three months before operational closure of the project allowing the evaluation mission to proceed while the project team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability. The Project Manager will remain on contract until the TE report and management response have been finalized. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the [UNDP Evaluation Resource Center](#). As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final TE report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Board. The TE report will be publically available in English on the UNDP ERC.

109. The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan, and will upload the final terminal evaluation report in English and the corresponding management response to the UNDP Evaluation Resource Centre (ERC). Once uploaded to the ERC, the UNDP IEO will undertake a quality assessment and validate the findings and ratings in the TE report, and rate the quality of the TE report. The UNDP IEO assessment report will be sent to the GEF IEO along with the project terminal evaluation report.

110. Final Report: The project's terminal PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package, complemented by a more detailed project results and lessons learnt report on the challenge programs implemented. The final project report package shall be discussed with the Project Board and other key stakeholders during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Communication and visibility requirements

111. Full compliance will be maintained with UNDP's Branding Guidelines. These can be accessed at <http://intra.undp.org/coa/branding.shtml>, and specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other things, these guidelines describe when and how

the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects needs to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The GEF logo can be accessed at: http://www.thegef.org/gef/GEF_logo. The UNDP logo can be accessed at <http://intra.undp.org/coa/branding.shtml>.

112. Full compliance will also be maintained with the GEF’s Communication and Visibility Guidelines (the “GEF Guidelines”). The GEF Guidelines can be accessed at: http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf. Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items. Where other agencies and project partners have provided support through co-financing, their branding policies and requirements should be similarly applied.

Mandatory GEF M&E Requirements and M&E Budget:

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ¹³ (US\$)		Time frame
		GEF grant	Co-financing	
Inception Workshop	UNDP Country Office	USD 5,000	None	Within two months of project document signature
Inception Report	Project Manager	None	None	Within two weeks of inception workshop
Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP	UNDP Country Office	None	None	Quarterly, annually
Monitoring of indicators in project results framework	Project Manager	To be carried out as part of annual project reporting	None	Annually
GEF Project Implementation Report (PIR)	Project Manager, UNDP CO and UNDP-GEF team	None	None	Annually
NIM Audit as per UNDP audit policies	UNDP Country Office	None	14,000 over 5 years	Annually or other frequency as per UNDP Audit policies
Lessons learned, knowledge generation and knowledge management	Project Manager	USD 26,000	None	Annually
Monitoring of environmental and social risks, and corresponding management plans as relevant	Project Manager UNDP CO	None	USD 5,000	On-going
Addressing environmental and social grievances	Project Manager UNDP Country Office BPPS as needed	None for time of project manager, and UNDP CO	None	Costs associated with missions, workshops, BPPS expertise etc. can be charged to the project budget.
Project Board meetings	Project Board, UNDP CO, Project Manager	USD 5,000	None	At least twice in the year
Supervision missions	UNDP Country Office	None ¹⁴	Non	Annually
Oversight missions	UNDP-GEF team	None ¹³	None	Troubleshooting as needed
GEF Secretariat learning missions/site visits	UNDP Country Office and Project Manager and UNDP-GEF team	None	None	To be determined.

¹³ Excluding project team staff time and UNDP staff time and travel expenses.

¹⁴ The costs of UNDP Country Office and UNDP-GEF Unit’s participation and time are charged to the GEF Agency Fee.

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ¹³ (US\$)		Time frame
		GEF grant	Co-financing	
Mid-term GEF Tracking Tool updates	Project Manager, Independent Evaluator	To be completed as part of MTR	None	Before mid-term review mission takes place.
Independent Mid-term Review (MTR) and management response	UNDP CO, Project team and UNDP-GEF team	USD 20,000	None	Between 2 nd and 3 rd PIR.
Terminal GEF Tracking Tool updates	Project Manager	To be completed as part of terminal review	None	Before terminal evaluation mission takes place
Independent Terminal Evaluation (TE) included in UNDP evaluation plan, and management response	UNDP CO, Project team and UNDP-GEF team	25,000	None	At least three months before operational closure
TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses		81,000	19,000	

VIII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

113. The project will be implemented following UNDP's Support to National Implementation Modality (Support to NIM), according to the Standard Basic Assistance Agreement between UNDP and the Government of Moldova and the Country Programme.

114. It is expected that the Ministry of Environment of the Republic of Moldova will serve as the project implementing partner. The Implementing Partner is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources.

115. The UNDP CO will ensure project accountability, transparency, effectiveness and efficiency in implementation. UNDP will provide the Implementing Partner with the following major support services for the activities of the project in accordance with UNDP corporate regulations, such as: (i) Identification and/or recruitment of project personnel; (ii) procurement of goods and services; (iii) financial services.

As GEF Implementing Agency, UNDP is ultimately accountable and responsible for the delivery of results, subject also to their certification by the Ministry of nature protection, as Implementing Partner. UNDP shall provide project cycle management services that will include the following:

- Providing financial and audit services to the project
- Overseeing financial expenditures against project budgets,
- Ensuring that activities including procurement and financial services are carried out in strict compliance with UNDP/GEF procedures,
- Ensuring that the reporting to GEF is undertaken in line with the GEF requirements and procedures,
- Facilitate project learning, exchange and outreach within the GEF family,
- Contract the project mid-term and final evaluations and trigger additional reviews and/or evaluations as necessary and in consultation with the project counterparts.

At the request of the Government of Moldova, UNDP shall also provide Direct Project Services (DPS) specific to project inputs according to its policies and convenience. These services, and the costs thereof, are specified in the Letter of Agreement in Annex L.

116. Establishing an effective project management structure is crucial for its success. The UNDP project management structure consists of roles and responsibilities that bring together the various interests and skills involved in, and required by, the project. As the project is cross-functional and involves partnership, its structure needs to be more flexible, and is likely to require a broad base of skills for a specific period of time.

117. The overall project governance and organisational structure is presented in the two figures below for the initial project implementation phase with the GCL starting its operations as the PIU for the project and after the GCL has been formally established as a self-standing legal entity (envisaged to happen at the mid-term of project implementation).

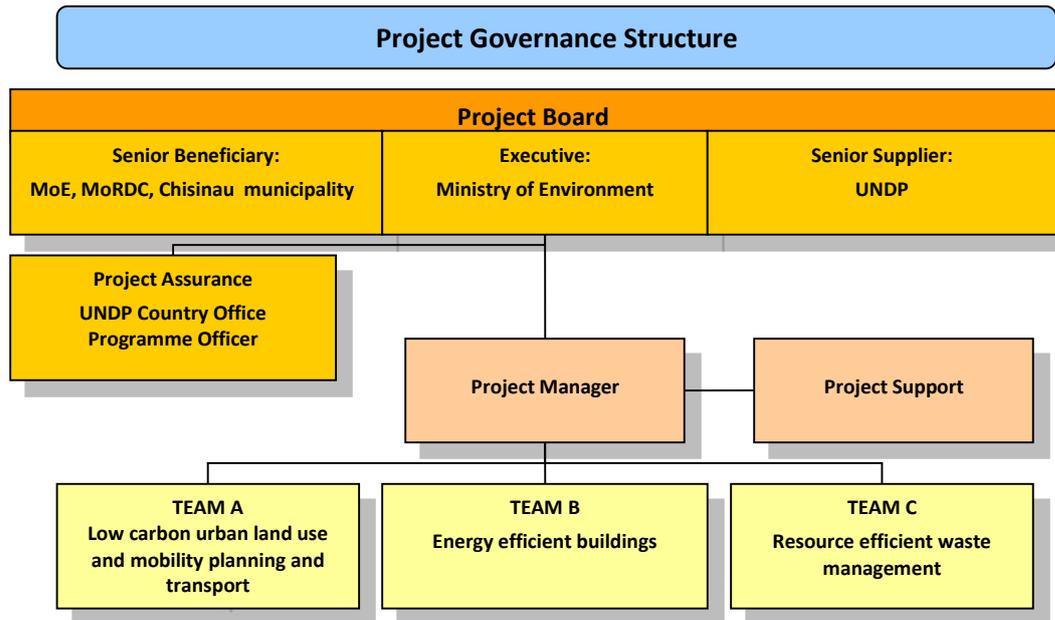


Figure IX.1 Project governance and organizational structure for the initial project implementation with the Green City Lab started as the PIU of the project.

118. **Project Board (PB)** will be responsible for making consensus-based decisions, in particular when guidance is required by the Project Manager (PM). The Board will play a critical role in project monitoring and evaluations by assuring the quality of these processes and associated products, and by using evaluations for improving performance, accountability and learning. The Project Board will ensure that required resources are committed. It will also arbitrate on any conflicts within the project and negotiate solutions to any problems with external bodies.

119. Specific responsibilities of the PB should include:

- (i) For the processes of justifying, defining and initiating a project:
 - Appraise and approve work plans submitted by the Project Coordinator;
 - Delegate Project Assurance roles as appropriate;
 - Commit project resources required by the work plan.
- (ii) For the process of running a project:
 - Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
 - Review project quarterly and annual plans and approve any essential deviations from the original plans; provided any deviations from the original plans require approval from UNDP-GEF Regional Technical Advisor
 - Review and approve progress and annual, as well as mid-term and final evaluation's project reports, make recommendations for follow-up actions;
 - Provide ad-hoc direction and advice for exception situations when project manager's tolerances are exceeded;
 - Assess and decide on conceptual project changes if necessary;
 - Assure that all planned deliverables are delivered satisfactorily and programme management directives are compiled;
- (iii) For the process of closing a project:
 - Assure that all products/outputs are delivered satisfactorily;
 - Review and approve the end of project report;
 - Make recommendations for follow-up actions and post project review plan;
 - Notify project closure to the stakeholders.

120. Project Board decisions shall be made in accordance with international standards that shall ensure management for development results, best value for money, fairness, integrity, transparency, and effective international competition. Members of the Project Board will consist of key national government

representatives, UNDP senior official and other stakeholders. Potential members of the Project Board will be reviewed and recommended for approval during the Local Project Appraisal Committee (LPAC) meeting. The final composition of the Project Board will be decided at the outset of project operations and presented in the Inception Report. New members into the Board or participants into the Board meetings during the project implementation can be invited at the decision of the Board, by ensuring, however, that the Board will remain sufficiently lean to facilitate its effective operation. The Project Board or project manager may also decide to establish separate working groups such as Urban Task Forces for any of the specific topics the project is dealing with or request UNDP or other Board members to host co-ordination meetings among the key donors, state and local public authorities and/or CSOs implementing project related activities in Moldova. The Project Board will contain of three distinct roles:

121. **Executive Role:** Representing the project ownership. The Ministry of Environment will appoint the representative in the project Board, who I co-sign project AWP as well as d quarterly and annual Combined Delivery Reports.

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

123. **Senior Beneficiary Role:** This role requires representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board will be to ensure the realization of project results from the perspective of different stakeholders and beneficiaries. Chisinau Municipality, the Ministry of Economy, the Ministry of Regional Development and Construction will represent interest of beneficiaries in the Project Board.

124. **Project Assurance:** The Project Assurance role supports the Project Board Executive by carrying out objective and independent project oversight and monitoring functions which are mandatory on all projects.

125. The Project Assurance role supports the Project Board by carrying out objective and independent project oversight and monitoring functions. Project Assurance has to be independent of the Project Manager; therefore, the Project Board cannot delegate any of its assurance responsibilities to the Project Manager. The Project Assurance role will rest with the Environment, Energy and Climate Change Cluster Lead of UNDP CO. Additional quality assurance will be provided by the UNDP Regional Technical Advisor as needed.

126. The following list includes the key suggested aspects that need to be checked by the Project Assurance throughout the project as part of ensuring that it remains consistent with, and continues to meet, a business need and that no change to the external environment effects the validity of the project:

- Maintenance of thorough liaison throughout the project between the supplier and the customer;
- Beneficiary needs and expectations are being met or managed;
- Risks are being controlled;
- Adherence to the Project Justification (Business Case);
- Constant reassessment of the value-for-money solution;
- The project remains viable; the scope of the project is not "creeping upwards" unnoticed;
- Internal and external communications are working;
- Applicable standards are being used and followed;
- Any legislative constraints are being observed
- Adherence to quality assurance standards.

127. Given its role in coordinating the development of national policies and strategies and ensuring inter-ministry collaboration, while also hosting the e-Government Center and being the Implementing Partner of the UNDP Social Innovation Hub project, the **State Chancellery** of the Republic of Moldova will be the **Government Co-operation Agency** of the project and member of the Board.

128. **Project Management Unit (PMU):** will be established comprising of permanent staff including a Project Manager, Technical Team Leaders (TL) and a Project Administrative and Finance Assistant. Full or part time procurement expert and a public outreach/marketing/behaviour expert as well as an ICT expert may be recruited, should adequate support for this task not be available through the project collaborating entities.

129. For the required ICT support and expertise, the project will count on the collaboration with the E-Government Center and the UNDP Social Innovation Hub project. Subject to the available financial resources, physical facilities and expected volume of work, some resources of the core team may also be shared with other ongoing UNDP projects such as the UNDP ESCO project.

130. The PMU will be headed by the Project Manager who will be recruited on a competitive basis. The PM will run the project on a day-to-day basis on behalf of UNDP and the Implementing Partner within the constraints laid down by the Board. The PM's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost. Development and consolidation of work plans, preparation of quarterly/annual progress reports, supervision the work of the project thematic experts, etc. are major responsibility of the PM.

131. While initially leading the establishment and development of the Green City Lab (GCL) services, the role of the project manager will change after the GCL has been formally established as a self standing legal entity. At that point, the project manager will move to work as the GCL executive director and a new project manager will be selected or the project manager will continue as the project manager and a new person will be selected to start the work as the GCL executive director.

132. As mentioned before, the **Green City Lab (GCL)** starts to develop and deliver its services as part of the PIU for the project, but at mid-point is envisaged to be transformed into a self-standing legal entity in the form of a public or semi-public institution. Project governance and organizational structure after formal establishment of the Green City Lab as self-standing legal entity presented in figure below.

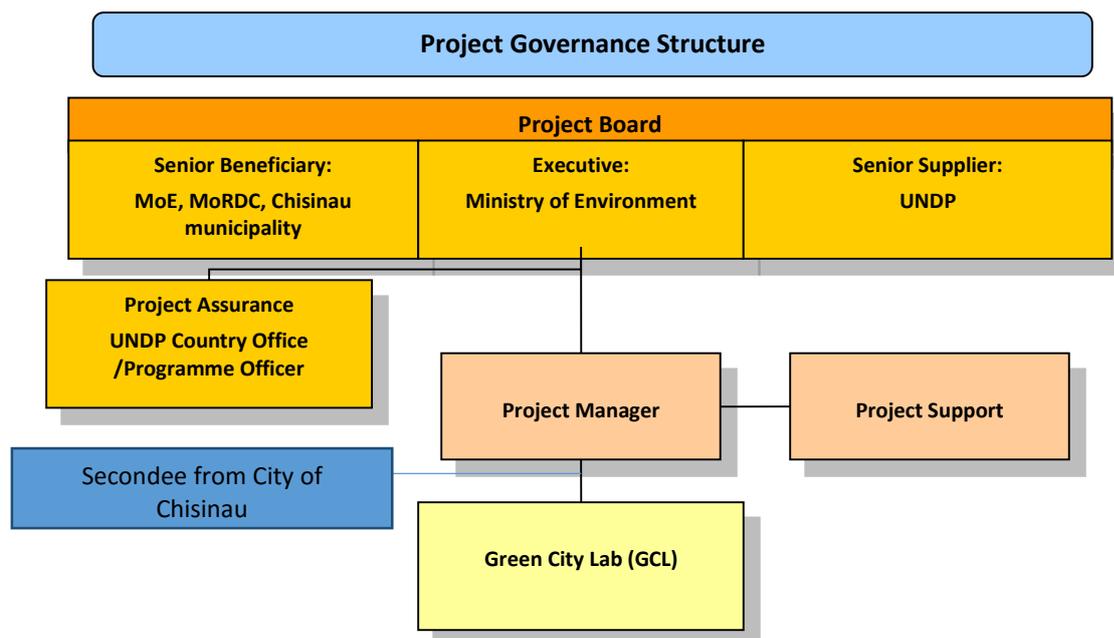


Figure IX.2 Project governance and organizational structure after formal establishment of the Green City Lab as self-standing legal entity.

133. For the first two years after establishment while still serving the project as a PIU, the GCL staff costs can be covered by the project resources in full, but this should be gradually reduced from year 3 onwards and dropping to zero at the end of the project. The envisaged staffing of the GCL is illustrated in the figure VIII.3 below. Until established as a self-standing legal entity, the positions of the GCL executive director and his/her assistant will be served by the project manager and the project assistant, respectively.

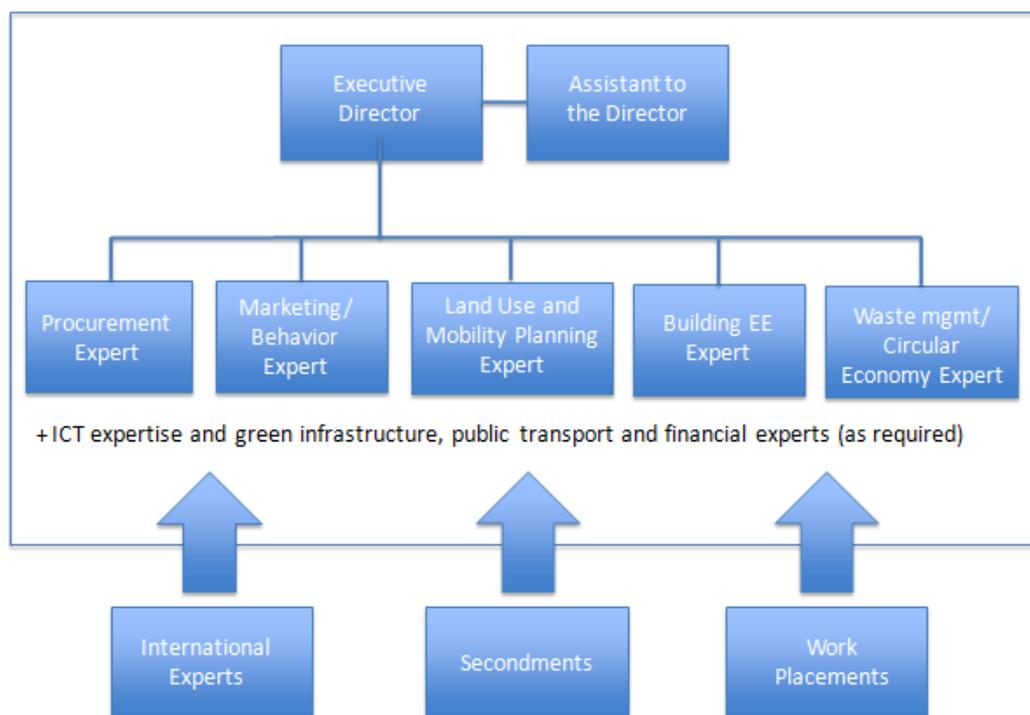


Figure VIII.3 Draft initial organisational chart and staffing of the GCL

134. Beside the executive director and his/her assistant, the core team of the Green City Lab will consist of the task managers for each of the three substance areas, on which the work of the GCL will initially focus, namely: i) Integrated and participatory urban land use and mobility planning and low carbon transport; ii) public and residential building energy efficiency and renewable energy use; and iii) resource efficient waste management, complemented by a procurement expert and a marketing/behavior expert. The GCL management framework and organigram is a subject to change based on legal status upon final establishment.

135. The task managers will be in charge for the development and implementation support and MRV of the targeted pilot/demo projects in their respective areas, including required stakeholder consultations, advocacy and financial structuring. In addition, they are expected to:

- Initially build up and actively contribute to the content of the project's Knowledge Management (KM) Platform by following up and compiling results of the latest international research, experiences and lessons learnt in their specific areas of expertise and updating the related sections of the project's KM platform;
- Actively explore and facilitate partnerships with both local and international expert institutions and companies in their specific subsectors to contribute to the development, implementation and financing of the planned pilot/demo projects as well as to the project's knowledge management, institutional strengthening and capacity building activities;
- Secure co-financing for the planned demonstration projects on the understanding that the maximum technical assistance available to support each individual green urban demonstration project will be maximum 25% of the total project cost, with the goal of ensuring that demonstration projects are implemented
- with the help of project's public outreach and communication expert, contribute to the design and compilation of public awareness material in their particular area of expertise and targeted subsectors;
- prepare and deliver presentations, lectures and articles contributing to the project's training, educational and other capacity building activities;
- contribute to the implementation of project's exit strategy, including preparation of the final project report and the dissemination, replication, scaling-up and mainstreaming of the project results as well as to the search of new projects, opportunities and partnerships, in frame of which the Green City Lab can continue to operate after the closure of the UNDP/GEF project on a self-sustaining basis.

136. For eventually required complementary expertise, the GCL as one of its first activities will compile an online roster of experts, which offers an opportunity for the included experts and expert institutions to present

their qualifications and expertise and market their services also for the consideration of other projects. At the same time, it will serve the GCL both during and after the implementation of the UNDP/GEF project by providing an opportunity to promptly find individual experts and expert institutions as well as to compile and offer teams to meet the specific demands of any further assignments and service offers thereby contributing to the project's exit strategy. This could be extended to a panel of approved installers and contractors to streamline procurement and address the supply side quality issues in general.

137. An experienced international project adviser (part time) will be contracted to support the project inception phase and project's annual planning and adaptive management throughout the project implementation. The need for complementary international expertise will be determined on a case by case basis during the project implementation by also considering the idea of a coaching team with a reference to Output 1.3 of the project (see Annex A). When working with international experts, particular emphasis is to be put on building in parallel the capacity of the local experts through on-the-job training and otherwise.

138. More detailed Terms of Reference for the key positions are presented as Annex E to this project document and will be subject to a review and eventual further updating during the project inception phase.

139. For physical location, the PIU and the Green City Lab is seeking to partner with the UNDP Social Innovation Hub project in exploring opportunities for shared premises.

Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information

140. In order to accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy and the GEF policy on public involvement. Please refer to chapter VIII for more details.

IX. FINANCIAL PLANNING AND MANAGEMENT

The total cost of the project is USD 42,569,726. This is financed through a GEF grant of USD 2,639,726, USD 80,000 in cash co-financing to be administered by UNDP and USD 39,850,000 in parallel co-financing. UNDP, as the GEF Implementing Agency, is responsible for the execution of the GEF resources and the cash co-financing transferred to UNDP bank account only.

Parallel co-financing: The actual realization of project co-financing will be monitored during the mid-term review and terminal evaluation and will be reported to the GEF. The planned parallel co-financing will be used as follows:

Co-financing source	Co-financing type	Co-financing amount	Planned Activities/Outputs	Risks	Risk Mitigation Measures
Chisinau Municipality	Cash	25,000,000	As per the co-financing letters: Investments in green urban planning and construction, improved energy efficiency and integrated renewable energy use in public and residential buildings, upgrading the public transport system and fleet in Chisinau, waste management and sharing the heating and possible EE investment costs of poor and vulnerable families.	Required municipal budget allocations for the listed investments are not made or projects are developed and implemented without GCL co-operation.	Maintaining close contacts with the city administration, analyzing and emphasizing the win-win opportunities of the suggested measures, supporting the CM

Chisinau Municipality	In-kind	500,000	Supporting the establishment and operations of the Green City Lab by assigning staff for and, as required, office space to work with the City Lab, providing space and other logistic support for organizing meetings and other project related activities as well as providing free access and other support for obtaining data and other information hold by the Municipality and its underlying agencies, as required for effective project implementation	As above	in project development and financial structuring and demonstrating the concrete value added of the GCL involvement and proposed "Green City approach" to the CM in practice
Ministry of Environment	Cash	13,600,000	Including eventual hosting of some project components and activities and demonstrating sustainable energy efficient construction practices and technologies in the planned new Environmental Center in Chisinau, including space and facilities for effective community and civil society engagement and participation. Investments in restoration of the Bic River Basin in Chisinau as one of the envisaged pilot areas for project's green land use and mobility planning component and construction of related infrastructure.	At the end, the MoE not able to attract adequate financing for the proposed investments	Supporting the MoE in development of and financial structuring for the mentioned projects
Ministry of Environment	In-kind	100,000	Including engagement and participation of the staff of the Ministry and its underlying agencies in the implementation of project activities, providing space and other logistic support for organizing meetings and other project related activities as well as providing free access and other support for obtaining data and other information hold by the Ministry and its underlying agencies, as required for effective project implementation.	No particular risks foreseen	NA
Agency for Innovation & Technology Transfer	Cash	500,000	Networking, financing innovative companies contributing to green city development, dissemination of project results through events and other activities	No particular risks foreseen	NA
UNDP	In-kind	240,000	Support of the UNDP funded Social Innovation Lab (MiLab) project to the GCL, monitoring and evaluation	No particular risks foreseen	NA
Total	Cash	39,100,000			
	In-kind	750,000			

Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the project board will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Board. Should the following deviations occur, the Project Manager and UNDP Country Office will seek the approval of the UNDP-GEF team as these are considered major amendments by the GEF: a) Budget re-allocations among components in the project with amounts involving 10% of the total project grant or more; b) Introduction of new budget items/or components that exceed 5% of original GEF allocation.

Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

Refund to Donor: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the UNDP-GEF Unit in New York.

Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP.¹⁵ On an exceptional basis only, a no-cost extension beyond the initial duration of the project will be sought from in-country UNDP colleagues and then the UNDP-GEF Executive Coordinator.

Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

Financial completion: The project will be financially closed when the following conditions have been met: a) The project is operationally completed or has been cancelled; b) The Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project; d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

The project will be financially completed within 12 months of operational closure or after the date of cancellation. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the UNDP-GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

¹⁵ see <https://info.undp.org/global/popp/ppm/Pages/Closing-a-Project.aspx>

X. TOTAL BUDGET AND WORK PLAN

Total Budget and Work Plan			
Atlas ¹⁶ Proposal or Award ID:	00097704	Atlas Primary Output Project ID:	00101330
Atlas Proposal or Award Title:	Moldova Sustainable Green Cities		
Atlas Business Unit	MDA10		
Atlas Primary Output Project Title	Moldova Green Cities		
UNDP-GEF PIMS No.	5492		
Implementing Partner	Ministry of Environment		

GEF Component/Atlas Activity	Responsible Party (Atlas Implementing Agent)	Fund ID	Donor Name	Atlas Budget Account Code	Atlas Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)
Component/ Outcome 1 Fully operational Green City Lab recognized by the key stakeholders as the leading innovation, knowledge management and networking platform and a source of expertise for catalyzing sustainable low carbon green city development in Moldova with secured funding to continue its operation also after the UNDP/GEF project closure.	MoEnv	62000	GEF	71200	Int'l Consultant Sht Term	15,000	15,000	15,000	15,000	15,000
				71300	Local Consultants Sht Term	10,000	10,000	7,500	5,000	5,000
				71400	Contractual services - Indiv.	39,900	39,900	39,900	39,900	39,900
				71600	Travel	3,000	5,000	5,000	5,000	2,000
				72100	Contractual services - comp.	10,000	20,000	20,000	20,000	15,000
				72200	Equipment and furniture	15,000	10,000	2,000	2,000	1,000
				72500	Office supply	3,000	2,000	3,000	3,000	2,000
				72800	ICT equipment	10,000	5,000	2,000	2,000	1,000
				73100	Rental and Maintenance - Premises	5,000	18,000	18,000	18,000	18,000
				74200	Audiovisual & print prod. costs	1,000	1,000	1,500	1,500	1,000
				74500	Miscellaneous	1,600	1,600	2,100	600	1,100
				75700	Training, workshops and conferences	10,000	25,000	25,000	20,000	20,000
					Subtotal GEF			123,500	152,500	141,000
	TOTAL Outcome 1				123,500	152,500	141,000	132,000	121,000	

¹⁶ See separate guidance on how to enter the TBWP into Atlas

Component/ Outcome 2 Successfully completed pilot/demonstration projects with related monitoring, reporting and verification of the results in the areas of: i) integrated and participatory urban land use and mobility planning; ii) residential building energy efficiency and renewable energy use; iii) low carbon mobility; and iv) resource efficient waste management.	MoEnv	62000	GEF	71200	Int'l Consultant Sht Term	10,000	20,000	20,000	10,000	5,000
				71300	Local Consultants Sht Term	15,000	25,000	30,000	30,000	12,500
				71400	Contractual services - Individ.	41,000	66,000	66,000	66,000	66,000
				71600	Travel	1,500	3,000	5,000	4,000	1,500
				72100	Contractual services - comp.	5,000	25,000	325,000	425,000	220,000
				72200	Equipment	0	20,000	30,000	30,000	0
				73400	Rental & maint. of other eq.	8,000	8,000	8,000	8,000	8,000
				74200	Audiovisual & print prod. costs	1,000	2,000	2,000	2,000	1,000
				74500	Miscellaneous	500	1,000	2,000	2,000	1,000
				75700	Training, workshops and conf	1,000	5,000	5,000	4,000	3,000
					Subtotal GEF	83,000	175,000	493,000	581,000	318,000
TOTAL Outcome 2		83,000	175,000	493,000	581,000	318,000				
Component/ Outcome 3 Monitoring and Evaluation, knowledge management and replication of project results	MoEnv	62000	GEF	71200	Int'l Consultant Sht Term	0	0	15,000	0	20,000
				71300	Local Consultants Sht Term	0	7,500	12,500	0	5,000
				71400	Contractual services - Individ.	8,700	8,700	8,700	8,700	8,700
				71600	Travel	1,500	1,000	1,000	1,000	500
				72100	Contractual services (comp)	0	12,500	10,000	0	0
				72200	Equipment	0	22,226	40,000	0	0
				74200	Audio-visual & print prod. costs	0	1,000	1,000	0	500
				74500	Miscellaneous	300	300	800	300	300
				75700	Training, workshops and conf	0	0	1,000	0	1,000
					Subtotal GEF	10,500	53,226	90,000	10,000	36,000
					UNDP	71200	Int'l Consultant Sht Term	0	0	15,000
71300	Local Consultants Sht Term	0	0	3,000		0	3,750			

				71600	Travel	0	0	2,000	0	2,500
				74100	Professional services (audit costs)	0	0	7,000	0	7,000
					Subtotal UNDP	0	0	27,000	0	32,000
				TOTAL OUTCOME 3		10,500	53,226	117,000	10,000	68,000
Project management	MoEnv/UNDP	62000	GEF	71400	Contractual services - Indiv.	17,200	13,200	13,200	13,200	13,200
				74598	Direct project costs	8,000	10,500	10,500	10,500	10,500
					Subtotal GEF	25,200	23,700	23,700	23,700	23,700
			UNDP	71400	Contractual services - Indiv.	1,000	5,000	5,000	5,000	5,000
				Subtotal UNDP	1,000	5,000	5,000	5,000	5,000	
			TOTAL Project management		26,200	28,700	28,700	28,700	28,700	
				TOTAL GEF	242,200	404,426	747,700	746,700	498,700	
				TOTAL UNDP	1,000	5,000	32,000	5,000	37,000	
				GRAND TOTAL	243,200	409,426	779,700	751,700	535,700	

Budget Notes

1. International sectoral experts and advisors, coaching team and support for transfer of knowledge for creation of sustainable GCL. If the Project Manager decides that it will be more effective this way, then international consultancy funds to support component 1 and component 2 for the International Project Advisor(s) may be combined into one consultancy to hire a company instead of 4 separate individuals. This will be discussed at the start of the project. The tender can be organized in such a way that both companies and teams of 4 associated individuals can both apply. It is envisaged that the contract will be over a period of 2 years leading up to the establishment of the GCL as a legal entity and shortly thereafter.
2. Supporting short term local experts (e.g. legal, technical and financial experts). One option to be considered would be to combine part or all of the national consultancy budget under component 1 and component 2 with the international consultancy budget and to have one contract with a company that combines both international and national experts. In this case, there would be one contract that covers budget lines 71 200 and 71 300 from component 1 and budget lines 71 200 and 71 300 from component 2.
3. Project Management Unit and Green City Lab staff cost. While this cost is shown over 5 years, the reality is that the goal is to have the GCL operating by the 3rd year of its establishment on a more commercial basis in which case it may be necessary to do a budget revision and re-allocate the budget from later years (i.e – year 4 and year 5) to other budget lines. Support for GCL staff is expected to come from revenues from clients once the GCL is full operational and not from grants.
4. International and local travel
5. International and/or national subcontracts for GCL support functions. This budget line could be combined with 71 200 from component 1 and 71200 from component 2 if the Project Manager takes the view that one larger contract with a company is more effective than one contract with a company and one contract with an individual.
6. Office equipment and furniture
7. Office supply
8. GCL establishment and office cost
9. Materials for project's public outreach, marketing and knowledge management activities
10. Miscellaneous office and other costs
11. Inception and validation workshops, events and workshops for community engagement, innovation and training

12. USD 100,000 is for Innovation awards for the Fast-Track Challenge programs. “Fast Track” challenge program(s) is built on the general model of challenge programs implemented in other countries to offer resources in the range of few thousands of USD (the exact amounts be specified later as a part of developing the challenges) for new and innovative complementary solutions contributing to low carbon green city development and which can be brought to implementation quickly and at modest costs. Among other GCL initiatives to encourage broad community engagement and participation, this will be an essential complementary tool to support the development of small innovative and visible initiatives at a community level and secure their early buy-in
13. International and/or national subcontracts for development and implementation of investment component of pilot/demo projects
14. MRV equipment for pilot/demo projects
15. Rental of vehicles
16. Lead international consultants for mid- term and final evaluations
17. Supporting short term local experts for EMIS, mid-term and final evaluations
18. International and/or national subcontracts for the supporting the EMIS implementation
19. EMIS hardware/equipment
20. International short term consultant to support EMIS
21. Local consultants on gender, EIA
22. Audit costs
23. Direct UNDP support costs

Summary of Funds

	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)
GEF	242,200	404,426	747,700	746,700	498,700	2,639,726
UNDP	31,000	35,000	67,000	40,000	57,000	230,000
Chisinau Municipality	250,000	4,100,000	7,525,000	7,525,000	6,100,000	25,500,000
Ministry of Environment	20,000	20,000	2,120,000	5,220,000	6,320,000	13,700,000
AITT	20,000	120,000	120,000	120,000	120,000	500,000
TOTAL	563,200	4,679,426	10,579,700	13,651,700	13,095,700	42,569,726

XI. LEGAL CONTEXT

This document together with the CPAP signed by the Government and UNDP which is incorporated herein by reference, constitute together a Project Document as referred to in the Basic Assistance Agreement (BAA). All references in the BAA to “Executing Agency” shall be deemed to refer to “Implementing Partner”, as such term is defined and used in this document.

Consistent with the Article III of the Basic Assistance Agreement (BAA), the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP’s property in the Implementing Partner’s custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:

- a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) assume all risks and liabilities related to the implementing partner’s security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner’s obligations under this Project Document [and the Project Cooperation Agreement between UNDP and the Implementing Partner].

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

Any designations on maps or other references employed in this project document do not imply the expression of any opinion whatsoever on the part of UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

XII. ANNEXES

- A. Multi-year work plan
- B. Monitoring plan
- C. Evaluation plan
- D. GEF Tracking tool at baseline
- E. Terms of Reference for Project Board, Project Manager, Chief Technical Advisor and other positions as appropriate
- F. GHG emission reduction Analysis
- G. Selected baseline initiatives, lessons learned and incrementality of GEF support, incl. examples and options for pilot/demonstration projects to be supported
- H. Summary of the Draft GCL Business Plan
- I. UNDP Social and Environmental and Social Screening Template (SESP)
- J. UNDP Project Quality Assurance Report
- K. Gender Analysis
- L. Agreement between UNDP and GoM for provision of support services
- M. Letters of financial commitments - Cofinancing letters (AITT, Ministry of Environment, City of Chisinau, UNDP)
- N. Project Support Letters – (EBRD, Carbon Trust)

Annex A: Multi Year Work Plan

Task	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5			
		Q1	Q2	Q3	Q4																
Outcome 1: Fully operational Green City Lab (GCL) recognized by the key stakeholders as the leading innovation, knowledge management and networking platform and a source of expertise for catalyzing sustainable low carbon green city development in Moldova with secured funding to continue its operation also after the UNDP/GEF project closure.																					
<u>Output 1.1:</u> Adequately equipped PIU in operation serving as the initial GCL with carefully selected staff within the premises suited for the envisaged functions of the GCL, including common workspace, meeting room(s) and other networking facilities accessible also for other actors affiliated with and/or interested in green city development such as CSOs, HOAs, individual experts, researcher and consultants, emerging start-up companies and others.	UNDP CO																				
<u>Output 1.2:</u> As a part of the of the above, an on-line network/roster of local and international green city experts and expert institutions with advanced search functions to serve partnership building and compilation of highly qualified expert teams to work with particular green city challenges and subprojects based on their areas of expertise and qualifications (CVs, references) that can be accessed and reviewed through the application.	GCL in co-operation with MiLab and eGov																				
<u>Output 1.3:</u> Concluded partnership and co-operation agreements with the key stakeholders, including city authorities, relevant line ministries, public utility companies, academic and other research and educational entities, expert associations and other CSOs, home-owner associations, private sector companies, local and international financing entities and other ongoing projects as well as international experts and expert institutions, some of which may also become a part of Green City Lab's international advisory and coaching team.	GCL																				
<u>Output 1.4:</u> Developing/adapting and taking into use complementary ICT solutions to support integrated and participatory planning, crowd-sourcing, impact monitoring and broad community engagement.	GCL in co-operation with MiLab and eGov																				
<u>Output 1.5:</u> Establishment of cross-sectoral green city / urban task forces consisting of a variety of key stakeholders from public and private sector for the three main areas the project is seeking to influence, namely i) urban land use and mobility planning; ii) energy efficient housing and related public utility services; and iii) resource efficient waste management. The task forces shall review and, as applicable, contribute to the revision of the current urban plans and sectoral development strategies (or those under development) as well as to support the design and selection of the first pilot/demonstration projects to be supported under project outcome 2.	GCL																				
<u>Output 1.6:</u> A series of innovation events, seminars, workshops, hackathons, green city “jam sessions” and others on project related topics and subsectors from where the ideas generated may also qualify for follow-up financing, for instance, under the Fast Track challenge program under Outcome 2.	GCL in co-operation with MiLab																				
<u>Output 1.7:</u> Subject to available budget, further development of national design codes and/or related guidance documents to simplify the process of developing projects and empowering the private sector and communities to develop projects and de-mystify the planning and development process.	GCL																				

Task	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				
		Q1	Q2	Q3	Q4																	
<u>Output 1.8:</u> The GCL established as a self standing legal entity, including a revised, strengthened, updated and finalized business plan, required statutory documents, Board of Directors as well as required staffing and premises																						
<u>Output 1.9:</u> Development of a suite of services and enhanced capacity and references of the GCL to deliver these services for fee paying customers by relying on the resources of both the core team and the network of its co-operating experts and partner institutions included in its Roster of Experts. These services may include energy audits, design and delivery of training courses, surveys and public outreach events and campaigns, various project management, procurement, design and financial structuring services, project impact monitoring, reporting and verification and others – subject to not jeopardizing the reaching of the other targets of the project during its implementation, however.	GCL																					
Outcome 2: Successfully completed pilot/demonstration projects with related monitoring, reporting and verification of the results in the areas of: i) integrated and participatory urban land use and mobility planning; ii) residential building energy efficiency and renewable energy use; iii) low carbon mobility; and iv) resource efficient waste management.																						
<u>Output 2.1:</u> Finalized design and agreed implementation and financing arrangements of the first pilot/demonstration projects , including full-fledged monitoring, reporting and verification (MRV) plan for the achieved results	GCL and selected project partners																					
<u>Output 2.2:</u> Outputs from an integrated and participatory land use and transport planning process incorporated into the urban land use and transport plans currently under preparation or to be initiated during project implementation;	Chisinau city administration.																					
<u>Output 2.3:</u> Completed construction and launching of the first pilot/demonstration investment projects in the areas of i) integrated and participatory urban land use and mobility planning; ii) residential building energy efficiency and renewable energy use; iii) low carbon mobility; and iv) resource efficient waste management.	GCL and selected project partners																					
<u>Output 2.4:</u> “Fast Track” challenge program(s) by building on the general model of challenge programs developed and implemented in other countries offering technical assistance in the range of few thousands of USD (the exact amount to be specified later as a part of the development of challenges) for new and innovative complementary solutions contributing to low carbon green city development and which can be brought to implementation quickly and at modest costs.	GCL in co-operation with MiLab																					
Outcome 3: Knowledge management and M&E to facilitate learning, scaling up and replication of project results.																						
<u>Output 3.1:</u> Inception workshop and inception report	UNDP CO																					
<u>Output 3.2:</u> A comprehensive on-line and regularly updated open data, knowledge management and networking platform and clearing house for green city development providing a basis for project’s public outreach, community engagement, capacity and partnership building activities and with institutional arrangements and agreements in place to continue its operation also after the project;.	GCL in co-operation with MiLab and eGov																					
<u>Output 3.3:</u> Annual MRV reports on the implemented pilot/demonstration projects (incl. “Fast Track” projects) and the results achieved, including surveys and analysis of the experience of the final beneficiaries and service users and related lessons learnt	GCL and selected project partners																					

Task	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5			
		Q1	Q2	Q3	Q4																
<u>Output 3.4:</u> Annual audit and PIR reports	UNDP CO and project manager																				
<u>Output 3.5:</u> With an agreed group of buildings and selected public utility services and in co-operation with the Energy Efficiency Agency, Climate Change Office and local public authorities, piloting an on-line energy management and monitoring system (incl. GHG emission inventories) by building on the experiences and, as applicable, software used by the UNDP/GEF supported Energy Management Information System (EMIS) projects in other countries;	GCL in co-operation with the EEA and Min. of Environment																				
<u>Output 3.6:</u> Project mid-term evaluation and management response	UNDP CO and project manager																				
<u>Output 3.7:</u> International mid-term CSUD knowledge management workshop/ seminar	GCL and project partners																				
<u>Output 3.8:</u> An end of the project “lessons learnt” report and recommendations for follow up such as required institutional and regulatory improvements, financial and fiscal incentives and other support mechanisms to effectively boost integrated participatory planning and investments on low carbon green city development in Chisinau and other communities in Moldova	GCL																				
<u>Output 3.9:</u> Project terminal evaluation	UNDP CO and project manager																				
<u>Output 3.10:</u> International end of project workshop/ seminar and other public outreach seeking to disseminate information on the project results and replicate the successes	GCL and project partners																				

Annex B: Monitoring Plan: The Project Manager will collect results data according to the following monitoring plan

Monitoring	Indicators	Description	Data Source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
Project objective from the results framework: To catalyze investments in low carbon green urban development by an integrated urban planning approach and by encouraging innovation, participatory planning and partnerships with a variety of public and private sector entities	Indicator 1: Extent to which climate finance is being accessed	For this particular project, corresponding to the monitored and reported co-financing	Recording the financial arrangements (incl. possible in-kind contributions) for all required inputs to achieve the project targets	Annually Reported in DO tab of the GEF PIR	GCL	Financial audits	The project MRV mechanisms collecting gender specific data Supported pilot/demo projects equipped with adequate MRV systems
	Indicator 2: Number of direct project beneficiaries with gender disaggregated data.	Monitored or estimated number of beneficiaries by the supported investment or other activities.	Required MRV systems of the supported investments projects. Expert estimates and surveys for other activities.	As above	GCL and project implementation partners	Project mid-term review and terminal evaluation	
	Indicator 3: Direct GHG emission reduction impact of the project	Calculated based on the achieved energy savings or other means of GHG reduction by the supported investment projects.	Required MRV systems of supported investments projects	As above	As above	As above	
Outcome 1: Fully operational Green City Lab recognized by the key stakeholders as the leading innovation, knowledge management and networking platform and a source of expertise for catalyzing sustainable low carbon green city development in Moldova with secured funding to continue its operation also after the UNDP/GEF project closure.	Indicator 4: Share of services listed in the GCL work and business plan available and/or completed	Calculated on the basis of the envisaged activities and services listed in the GCL business and work plans	Monitoring the GCL business and work plan implementation	Annually Reported in DO tab of the GEF PIR	UNDP CO	On-site monitoring by UNDP CO	Information to what extent integrated and
	Indicator 5: Number of partnerships for green city development established in the frame of jointly implemented and/or developed projects and measures	Defined as “partnership” if concrete financial (cash or in-kind) contributions to the project or measures under consideration	To be analyzed for each reported activity	As above	GCL	Project reports	
	Indicator 6: Value of signed contracts / agreements not funded by GEF resources for covering the GCL operational costs after the project end.	Self-explanatory.	GCL annual financial reports	As above	GCL	Financial audits	
Outcome 2: Successfully completed pilot/demonstration	Indicator 7: The extent, to which integrated and participatory planning	A qualitative assessment to what extent integrated and participatory planning	Annual project progress reports + independent review of the updated PUG (or work in	Annually	GCL and project evaluators		

<p>projects with related monitoring, reporting and verification of the results in the areas of: i) integrated and participatory urban land use and mobility planning; ii) residential building energy efficiency and renewable energy use; iii) low carbon mobility; and iv) resource efficient waste management.</p>	<p>methodologies are taken into use in updating the Chisinau General Urban Development Plan (PUG) and related zonal plans.</p> <p>Indicator 8: Status of the pilot/demo projects for each of the targeted subsectors</p> <p>Indicator 9: Number of projects supported by the “Fast Track Challenge Program”.</p>	<p>methodologies have been applied in updating the Chisinau General Urban Development Plan (PUG) and related zonal plans</p> <p>Not selected / selected completed technical design or feasibility study / financial closure/ under construction/ completed). Self explanatory</p>	<p>progress) at the mid-term and end of the project</p>	<p>Reported in DO tab of the GEF PIR</p>			<p>participatory planning methodologies have been used is available</p>
			<p>Project progress reports</p>	<p>As above</p>	<p>GCL</p>	<p>On-site monitoring by UNDP CO</p>	
			<p>Project progress reports</p>	<p>As above</p>	<p>GCL</p>	<p>Project mid-term review and terminal evaluation</p>	
<p>Outcome 3: Knowledge management and M&E to facilitate learning, scaling up and replication of project results.</p>	<p>Indicator 10: Status of the Project MRV system and quality of the data delivered by that</p> <p>Indicator 11: Agreed knowledge management (KM) products and events delivered</p> <p>Indicator 12: Number of EoIs received for replicating the project intervention strategy, specific technical solutions or business models for new projects and/or municipalities</p>	<p>To be verified whether each supported GHG mitigation measure has a MRV system in place reporting, as applicable, actually measured data</p> <p>Consisting of the KM products and events included in the GCL work plan</p> <p>Expressions of Interest received in writing or in other verifiable format</p>	<p>Installed metering equipment and user surveys</p>	<p>Annually</p> <p>Reported in DO tab of the GEF PIR</p>	<p>GCL and project beneficiaries</p>	<p>As above</p>	<p>Adequate MRV required for and included into each supported project design from the very beginning</p>
			<p>Project progress reports</p>	<p>As above</p>	<p>GCL</p>	<p>As above</p>	
			<p>Project progress reports</p>	<p>As above</p>	<p>GCL</p>	<p>As above</p>	
<p>Mid-term GEF Tracking Tool</p>	<p>N/A</p>	<p>N/A</p>	<p>Baseline GEF Tracking Tool included in Annex.</p>	<p>After 2nd PIR submitted to GEF</p>	<p>GCL team or project consultant</p>	<p>Completed GEF</p>	

Terminal GEF Tracking Tool	N/A	N/A	Baseline GEF Tracking Tool included in Annex.	After final PIR submitted to GEF	GCL team or project consultant	Tracking Tool Completed GEF Tracking Tool
Mid-term Review	N/A	N/A	To be outlined in MTR inception report	Submitted to GEF same year as 3 rd PIR	Independent evaluator	Completed MTR
Environmental and Social risks and management plans, as relevant.	N/A	N/A	Updated SESP and management plans	Annually	Project Manager UNDP CO	Updated SESP

Annex C: Evaluation Plan:

Evaluation Title	Planned start date Month/year	Planned end date Month/year	Included in the Country Office Evaluation Plan	Budget for consultants ¹⁷	Other budget (i.e. travel, site visits etc...)	Budget for translation
Mid-term Evaluation	Between 2 nd and 3 rd PIR	July 2019	Yes <i>Mandatory</i>	USD 20,000	none	N/A
Terminal Evaluation	3 months before operation closure	To be submitted to GEF within three months of operational closure	Yes <i>Mandatory</i>	USD 25,000	none	N/A
Total evaluation budget				USD 45,000		

¹⁷ The budget will vary depending on the number of consultants required (for full size projects should be two consultants); the number of project sites to be visited; and other travel related costs. Average # total working days per consultant not including travel is between 22-25 working days.

Annex D: GEF Tracking Tool at baseline

Please refer to the attachments

Annex E: Terms of Reference for Project Board, Project Manager and other key positions

Project Board

Overall responsibilities¹⁸: The Project Board is responsible for making by consensus management decisions for a project when guidance is required by the Project Manager, including recommendations for UNDP/Implementing Partner approval of project plans and revisions. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance to standards¹⁹ that shall ensure best value to money, fairness, integrity transparency and effective international competition. In case a consensus cannot be reached, final decision shall rest with the UNDP Programme Manager. Project reviews by this group are made at designated decision points during the running of a project, or as necessary when raised by the Project Manager. This group is consulted by the Project Manager for decisions when PM tolerances (normally in terms of time and budget) have been exceeded.

Based on the approved annual work plan (AWP), the Project Board may review and approve project quarterly plans when required and authorizes any major deviation from these agreed quarterly plans. It is the authority that signs off the completion of each quarterly plan as well as authorizes the start of the next quarterly plan. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems between the project and external bodies. In addition, it approves the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities.

For further details about the role, duties and responsibilities of the Project Board a reference is made to the most recent UNDP Programme and Project Management Guidance Documents.

Project Manager

Overall responsibilities: The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the Board. The Project Manager is responsible for day-to-day management and decision-making for the project and **for transforming the Green City Lab from a UNDP supported organization with staff on UNDP Service Contracts into a non-for profit entity which has staff supported instead from the revenues of the GCL and which successfully implements green urban development projects, is sustainable, and which will be able to expand and grow in size and scope.** The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost.

Specific responsibilities include:

Overall project management:

- Manage the realization of project outputs through activities;
- Provide direction and guidance to project team(s)/ responsible party (ies);
- Liaise with the Project Board or its appointed Project Assurance roles to assure the overall direction and integrity of the project;
- Identify and obtain any support and advice required for the management, planning and control of the project;
- Responsible for project administration;
- Liaise with any suppliers;
- May also perform Team Manager and Project Support roles;

Running a project

- **Ensure the business plan for the Green City Lab is updated and strengthened in line with the prevailing market conditions and agreed SLA's as soon as possible following the start of the project**
- Plan the activities of the project and monitor progress against the initial quality criteria.
- Mobilize goods and services to initiative activities, including drafting TORs and work specifications;
- Monitor events as determined in the Monitoring & Communication Plan, and update the plan as required;
- Manage requests for the provision of financial resources by UNDP, using advance of funds, direct payments, or reimbursement using the FACE (Fund Authorization and Certificate of Expenditures);
- Monitor financial resources and accounting to ensure accuracy and reliability of financial reports;

¹⁸ Source: Guidelines on UNDP Implementation of UNDAF Annual Review Process

¹⁹ UNDP Financial Rules and Regulations: Chapter E, Regulation 16.05:

- Manage and monitor the project risks as initially identified in the Project Brief appraised by the LPAC, submit new risks to the Project Board for consideration and decision on possible actions if required; update the status of these risks by maintaining the Project Risks Log;
- Be responsible for managing issues and requests for change by maintaining an Issues Log.
- Prepare the Project Quarterly Progress Report (progress against planned activities, update on Risks and Issues, expenditures) and submit the report to the Project Board and Project Assurance;
- Prepare the Annual review Report, and submit the report to the Project Board and the Outcome Board;
- Based on the review, prepare the AWP for the following year, as well as Quarterly Plans if required.

Closing a Project

- Prepare Final Project Review Reports to be submitted to the Project Board and the Outcome Board;
- Identify follow-on actions and submit them for consideration to the Project Board;
- Manage the transfer of project deliverables, documents, files, equipment and materials to national beneficiaries;
- Prepare final CDR/FACE for signature by UNDP and the Implementing Partner.

Beside the general UNDP project manager responsibilities described above and supported by the other members of the core project team, the project manager will also act as the executive director of the Green City Lab. As defined by the project strategy, the Green City Lab is to be treated and managed as a business from day one, using private sector approaches to income generation, staff utilization, business development and robust management. Therefore, the specific qualifications and evaluation of candidates suited for such a position shall be emphasized during the selection process. The previous experience of the applicants in running “business like” endeavors needs to be highlighted and, as needed, the search continued if suitable candidates cannot be found by the first round of applications. The previous UNDP experience of the candidates applying for the project manager position in this respect may be of secondary importance, but if missing, obviously needs to be compensated by other members by the core project team such as the project assistant and the procurement expert.

Expected Qualifications:

- Advanced university degree and at least 10 years of professional experience in the specific areas the project is dealing with;
- Good knowledge of the international state-of-the-art approaches and best practices in catalyzing green and climate smart development in urban areas;
- Experience in managing projects of similar complexity and nature, including demonstrated capacity to manage people and actively explore new, innovative implementation and financing mechanisms to achieve the project targets;
- Familiarity with and experience on working with the public sector and the local public authorities in Moldova;
- Demonstrated experience and success in the engagement of and working with the private sector and CSOs, creating partnerships and leveraging financing for activities of common interest;
- Good analytical and problem-solving skills and the related ability for adaptive management with prompt action on the conclusion and recommendations coming out from the project’s regular monitoring and self-assessment activities as well as from periodic external evaluations; Ability and demonstrated success to work in a team, to effectively organize it, and to motivate its members and other project counterparts to effectively work towards the project’s objective and expected outcomes;
- Good communication skills and competence in handling project’s external relations at all levels; and
- Fluent/good knowledge of Moldovan and English languages.
- Familiarity and prior experience with the UNDP and GEF requirements and procedures is considered as an asset.

Green City Lab (GCL)

Main tasks and responsibilities:

The Green City Lab (GCL) will be in charge for implementing the project in accordance with the tasks and expected outputs and targets outlined in the project document, while also building up its capacity to become the leading knowledge management and networking platform, clearing house, an inter-mediator of finance and a source of innovations and expertise to catalyze sustainable low carbon green city development in Moldova. While started as a Project Implementation Unit led by the Project Manager, the GCL is expected to be established as a self-standing legal entity by the mid-point of project implementation still continuing to be in charge for implementing activities and delivering outputs to reach the main project targets, but gradually building up its capacity for leveraging financing and continuing its operation also after the project. In this respect, close co-operation with the key stakeholders of the project,

including Chisinau municipality, the relevant ministries such as the Ministry of Environment, the Ministry of Economy, the Ministry of Regional Development and Construction and the State Chancellery and the entities hosted by them, the other related project and initiatives such as the UNDP Social Innovation Hub project and the e-Government Center is also foreseen from the very beginning, The GCL administrative structure and project exit strategy have been discussed in further detail in the chapter VIII “Governance and Management Arrangements” of this project document and in the draft GCL Business Plan. It is important to note that the Executive Director of the Green City Lab will be appointed by the Board of the Green City Lab, not by UNDP and the Executive Director of the Green Climate Lab should not be a UNDP Service Contractor Holder. Terms and conditions of remuneration for the Executive Director will need to be discussed and agreed with the Board.

Beside the project manager / executive director of the Green City Lab, the GCL core team will consist of task managers (or team leaders) for each of the three substance areas, on which GCL’s work will initially focus, namely: i) Integrated and participatory urban land use and mobility planning and low carbon transport; ii) public and residential building energy efficiency and renewable energy use; and iii) resource efficient waste management.

The project manager and the three task leaders will be supported by a full time assistant and a full or part time procurement expert and a public outreach/marketing/behavior expert as well an ICT expert, should adequate support for this task not be available through the project collaborating entities such as the e-Government Center and the UNDP Social Innovation Hub.

Expected results and related milestones

For the duration of the UNDP/GEF project, the expected results and related milestones of the PIU/GCL will be consistent with those of the Project Results Framework. Further targets, as applicable, for the post-project period will be defined during the last year of project implementation by also taking into account the conclusions and recommendation of the project Terminal Evaluation.

Each GCL staff member is expected to develop the business and be involved in the evolution of the GCL into a trading organization and shall be empowered to take responsibility for their own projects, client relationships and further business development. The built in Marketing and Communications function will not only promote the activities of the GCL around green urban development, targeted at citizens, businesses and stakeholders, but shall also be engaged in promoting the GCL as an organization to potential clients and funders. The specific duties and expected qualifications of this GCL core team will be discussed in further detail below.

Project/GCL Assistant

Duties and responsibilities

Supporting the project manager/GCL executive director, GCL task leaders and other members of the GCL team in the project implementation, including:

- Responsibility for logistics and administrative support of project implementation, including administrative management of the project budget;
- Controlling project expenditures and maintaining up to date business and financial documentation, in accordance with UNDP and other project reporting requirements
- Organizing meetings, business correspondence and other communications with the project partners;
- Provide logistical support to the project team and consultants working for the project in organizing duty travel, meetings, workshops etc;
- Ensuring effective dissemination of, and access to, information on project activities and results and supporting the project outreach and PR activities in general, including keeping the project web-site up to date in co-operation with the project’s IT and communication experts;
- Managing the projects files and supporting the project team in preparing the required financial and other reports required for monitoring and supervision of the project progress; and
- Supporting the project team in managing contracts, in organizing correspondence and in ensuring effective implementation of the project otherwise.

Expected Qualifications:

- University degree in economy, engineering or in other specific areas the project is dealing with and/or required for the position under consideration and at least 5 years of related professional experience;
- Fluent/good knowledge of the Moldovan and English languages;
- Demonstrated experience and success of work in a similar position;

- Good administration and interpersonal skills;
- Ability to work effectively under pressure; and
- Good computer skills.
- Familiarity and prior experience with UNDP and GEF requirements and procedures is considered a strong asset.

GCL Task Manager / Team Leaders

Duties and responsibilities

The task managers/team leaders will be in charge for the development, implementation support and MRV of the targeted pilot/demo projects in their respective areas, including required stakeholder consultations, advocacy and financial structuring. In addition, they are expected to:

- initially build up and actively contribute to the content of the project's Knowledge Management (KM) Platform by following up and compiling results of the latest international research, experiences and lessons learnt in their specific areas of expertise and updating the related sections of the project's KM platform;
- actively explore and facilitate partnerships with both local and international expert institutions and companies in their specific subsectors to contribute to the development, implementation and financing of the planned pilot/demo projects as well as to the project's knowledge management, institutional strengthening and capacity building activities;
- with the help of project's public outreach and communication expert, contribute to the design and compilation of public awareness material in their particular area of expertise and targeted subsectors;
- prepare and deliver presentations, lectures and articles contributing to the project's training, educational and other capacity building activities;
- contribute to the implementation of project's exit strategy, including preparation of the final project report and the dissemination, replication, scaling-up and mainstreaming of the project results as well as to the search of new projects, opportunities and partnerships, in frame of which the Green City Lab can continue to operate also after the closure of the UNDP/GEF project.

Expected Qualifications:

- Advanced university degree and at least 10 years of professional experience from the specific subsector to be covered;
- Good knowledge of the international state-of-the-art approaches and best practices in catalyzing green and climate smart development in their particular field of expertise;
- Experience in managing projects of similar complexity and nature, including demonstrated capacity to manage people and actively explore new, innovative implementation and financing mechanisms to achieve the project targets;
- Familiarity with and experience on working with the public sector and the local public authorities in Moldova;
- Demonstrated experience and success in the engagement of and working with the private sector and CSOs, creating partnerships and leveraging financing for activities of common interest;
- Good analytical and problem-solving skills and the related ability for adaptive management with prompt action on the conclusion and recommendations coming out from the project's regular monitoring and self-assessment activities as well as from periodic external evaluations;
- Ability and demonstrated success to work in a team, to effectively organize it, and to motivate its members and other project counterparts to effectively work towards the project's objective and expected outcomes;
- Good communication skills and competence in handling project's external relations at all levels; and
- Fluent/good knowledge of Moldovan and English languages.

Procurement Expert

Duties and responsibilities:

- With support of the project's technical experts and advisors, finalize ToRs and required tender documents for all the GCL and project related procurement and managing the tendering process otherwise;

- Setting up and maintaining for PIU / GCL an effective monitoring and recording system on procurement and supporting project's financial management and reporting to UNDP otherwise;
- Identify indicators of and working on preventing fraud, collusion and other unethical practices in procurement/selection processes;
- Preparing and monitoring project's annual/semi-annual procurement plans;
- Developing and finalizing the required documentation for all the public calls organized for project's and CGL's investment support related activities, including the Fast Track Challenge Programs;
- Follow up and research on international innovative financing and procurement schemes, promoting innovation and green procurement (incl. challenge programs);
- Providing and developing the GCL green procurement services and advice to gradually become one of the GCL fee generating activities;
- Building up and regularly updating a specific subsection into GCL KM platform for green procurement and available financing sources, their funding criteria and application procedures for financing green city investments and related TA activities;
- Searching and doing research on new national and international grant and other financing sources for financing green city investments and uploading this information to project's KM platform;
- Development of a framework of pre-approved contractors for projects, securing quality standards;

Expected Qualifications:

- A degree in procurement, business administration or related areas;
- At least 5 years of professional experience in being charge of procurement of goods and services, of at least 3 years in the public sector;
- In-depth knowledge on the national rules and legislations as it concerns the public sector procurement in particular;
- Familiarity with the international green procurement schemes and initiatives, including the related content of the EU legislative framework;
- Good communication skills and competence in handling project's external relations at all levels and ability to work in a team; and
- Fluent/good knowledge of Moldovan and English languages.
- Experience on organizing public calls of proposals for larger investments programs as well as familiarity and experience with UNDP procurement policies and procedures is considered as a strong asset;

Public outreach/marketing/behavior expert

Duties and responsibilities:

- Coordinating and, as applicable, leading all the project public outreach, marketing and behavior change initiatives and activities and related events, including the GCL knowledge management platform;
- Developing the GCL marketing and communication strategy and campaigns to raise awareness of the GCL as a step change in participatory planning across the municipality and a key interface between citizens and the municipal administration;
- Defining the programme for, organizing and facilitating the participatory planning and innovation events, workshops and consultations across the Municipality to inform, engage and gather ideas for green urban development projects with citizens and businesses;
- Developing and facilitating behavior change programmes to support the proposed physical investments and measures and support the concept of a 'Smart City' that is responsive to the needs to citizens whilst also requiring individual responsibility;
- Participate in the design and development of ICT software applications supporting the GCL targets and activities; Initiating and facilitating new partnerships to support project public outreach and other related targets;
- Developing and preparing required public outreach and marketing materials;
- Supporting the public outreach activities of the project beneficiaries as well as development and implementation of projects e.g. under the GCL Fast Track Challenge Program;

Expected Qualifications:

- An advance degree in communications, marketing, social or other closely related field;
- At least 7 years of working experience in public outreach and marketing;
- Proven experience in developing communication strategies; experience at international level shall be considered as asset;

- Demonstrated experience and success in the engagement of and working with the public and private sectors (incl. CSOs), creating partnerships and leveraging interest for activities of common interest;
- Experience in relevant graphic design and publishing programmes, developing, editing and layout of publications;
- Good command of commonly used design and publishing software (Adobe Illustrator, Photoshop, InDesign, or equivalent);
- Good command of online publishing software and tools;
- Demonstrated skills in editing news articles, press releases, success stories, newsletters, blogs;
- Experience and good network with media is considered as a strong asset;

ICT Expert (as applicable)

Duties and responsibilities:

- Providing technical backstopping and advice for any ICT related project activities;
- Organize training for and train personally the project participants and partners at the central government and municipal level on the use of state of the art IT technologies and applications to advance the project goals, including compilation and preparation of on-line awareness raising and training materials on any ICT related issues;
- In co-operation with the ICT experts of the project partners, conducting further research on the existing technical barriers and elaboration of required measures, technical options and steps to be taken to improve the coverage of and access to public databases on Green City development related topics through a single interface;
- Supporting the project management in drafting Terms of Reference and technical specifications for any IT related procurement (including hard and software and related consultant services) and, as applicable, in related contract negotiations;
- Supporting the on-line public outreach and knowledge management activities of the project, including development of related websites;
- Participate in the design and development of ICT hard- and software applications supporting the GCL targets and activities
- Advising the project team and, as needed, other project participants on system safety and adequate back-up arrangements of the IT systems taken into use and supporting their installation and regular maintenance for the duration of the project;
- Providing other technical backstopping for and supporting the project team in any other IT related matters, as requested by the project manager or other members of the core project team.

Expected Qualifications:

- Advanced university degree in IT technology and/or programming and at least 8 years of professional experience in project related areas;
- Good interpersonal and training skills;
- Good analytical and problem-solving skills;
- Good communication skills and competence in handling project's external relations at all levels; and
- Fluent in Serbian and English languages

International Project Advisor (part-time) – (Can be a company or a team of 4 individuals – to be determined)

Duties and Responsibilities:

The International Project Advisor(s) will be hired at the start of the project right after the hiring of the initial Project Manager as a matter of priority and urgency. The International Project Advisor can be either a group of 4 individuals or a company (with 4 key experts) hired initially over a period of 24 months which should cover the period from shortly after project establishment until the period in time when the GCL is established as a commercial entity. If the contract will be with a company, then 4 key experts will be involved both international and national and several budget lines may need to be combined. Given the variety of tasks that need to be fulfilled, it is recommended to hire 4 key experts, a team leader, a financial expert, a legal expert, and a stakeholders and outreach expert. It is recommended to have 2 or 3 key experts as international consultants and 1 or 2 key experts as national consultants and the total number of man days under the contract is estimated as 400 man days over a period of 2 years with at least 8 missions to Moldova (minimum of 1 mission per 3 months). The breakdown of the estimated 400 man days should be determined as part of the full tender documentation. The role of the International Project Advisors once they have been selected will be to support the development and growth of the GCL and to assist UNDP and the project management in monitoring the progress of the project and its different sub-components and, as needed, as well as to build the capacity of the local experts working for the project to successfully implement the project activities, ensuring that they comply with the agreed benchmarks and success indicators of the project as well

as international best practices and lessons learnt. A main goal of the international project advisor will be to assist the GCL with transitioning over time from a donor funded grant based organization into a commercially sustainable entity so it will be important to select a company/organization or expert with relevant experience in this regard.

The expected level of involvement of the International Project Advisor will be determined at the start of the project including the number of missions (initial estimate is a minimum of 8 missions) and number of days required (initial estimate is 400 man days over a period of 2 years for 4 key experts of which 2 or 3 should be international experts and 1 or 2 should be local experts). The total number of Key Experts is estimated as 4 Key Experts.

Further international consultancy support to the GCL after it has been established will be determined at a later date, based on a more detailed needs assessment once the GCL has been established:

The specific responsibilities of the International Project Advisor include, *inter alia*, to:

- Support the development and finalization of a business model and full business plan for the GCL including development of services and fee structures
- Develop marketing material for the GCL for attraction of new clients / business opportunities;
- support the local project management team in organizing the implementation of the project's different sub-components at the inception phase, including support to the project management in the preparation of the project inception report and the annual output specific work plans, drafting of Terms of Reference for the national and, as needed, additional international experts and subcontractors, required tender documents etc;
- Provide capacity building support to the staff of the GCL in carrying out their responsibilities and assisting them with meeting commercial business targets
- Organize a study tour for GCL staff to another similar innovation hub in another country;
- support adaptive management by annually (or semi-annually) reviewing the progress of the project and its different subcomponents and making suggestions for eventual changes and/or complementary activities;
- propose methodologies and specific software models for market monitoring and for assessing the GHG reduction impact of the project and its outputs;
- by building on international experiences and lessons learnt from promoting the Green and Smart City, contribute to the design and adaptive management of the project's financial support programs as well as provide policy and other recommendations to advance the project goals;
- support the GCL team members in supervising the work of the contracted individual experts and companies, including review of the feasibility studies and the technical design, financing and implementation arrangements of the planned pilot projects;
- support the GCL team members in arranging co-operation with the already identified key stakeholders and, as applicable, support the identification and establishment of new national and/or international partnerships and to support the project goals and objectives; and
- support the local project team in monitoring and evaluating the performance and the outcome of the pilot projects under implementation.

Expected Qualifications for each Key Expert (more detail to be provided in the full ToR):

- a university degree in the project related field;
- experience with the establishment of a non-for profit organization that works in the area of sustainable energy and/or green urban development
- demonstrated experience and success in supporting similar projects (or its sub-components)
- good knowledge of international experiences, state of the art approaches and best practices in the specific areas the project and its subcomponents are dealing with;
- good analytical skills and effective communication and training skills and competence in handling external relations at all levels;
- ability to work in a team and to motivate other team members and counterparts; and
- fluency in English.

The four key experts which together make up the International Project Advisor will be (1) team leader (2) financial expert (3) legal expert and (4) stakeholders and outreach expert. Detailed terms of reference for each of the 4 positions will need to be developed by the Project Manager as soon as the project starts and a tender should be announced to select an appropriate company/organization/team of individuals in accordance with UNDP rules and procedures.

It is very important that the International Project Advisor will be hired shortly after the start of the project due to the fact that they will play such an important role in developing the business plan and in the design, establishment, and operation of the Green City Lab and then once it is operational with training and capacity building activities to support its initial operations as a new sustainable venture.

Annex F: GHG Emissions Reduction Analysis

In November 2014, the GEF Secretariat, in cooperation with STAP, started a review process aimed at further refining its GHG accounting methodologies, and exploring opportunities to harmonize them with those developed by relevant partners. The results of this exercise: “Guidelines for Greenhouse Gas Emissions Accounting and Reporting for GEF Projects” were presented to the GEF Council in 48th meeting in June 2015. The GHG analysis conducted for this Moldova Sustainable Green Cities project takes into account these updated guidelines and recommendations as elaborated in further detail below.

While definition of the GEF on direct GHG emission reductions has remained unchanged as “emission reductions, which attributable to the investments made during the project’s supervised implementation period and totaled over the respective lifetime of the investments”, for “indirect emission” reductions the new guidelines recommend the use of “consequential emissions” instead, defined as “those projected emissions that could result from a broader adoption of the outcomes of a GEF project plus longer-term emission reductions from behavioral change.”

For direct GHG emission reduction estimates, the detailed technical information on the investments to be facilitated by the project during its implementation is not known yet, which makes it difficult to apply the technology specific GEF GHG emission calculation methodologies at this project preparatory stage. Therefore, and for the purpose of setting the direct end-of-the project GHG emission reduction targets for the project’s Results Framework and the GHG Mitigation Tracking Tool, the analysis was done based on the cost-efficiency criteria adopted at the work program inclusion (PIF) for the GEF grant funding, namely that for each 10 US dollars of GEF grant funding (not including co-financing), at least 1 tons of CO_{2eq} should be reduced by the supported investments. This combined with the total allocated GEF resources of about USD 1 million for the proposed grant schemes will result in the minimum target for direct GHG emission reduction of 100 ktons of CO_{2eq}. Linked to the other project cost-sharing criteria of not covering more than 20% of the total investment by GEF grant funding, the USD 1 million GEF grant contribution should leverage at least USD 4 million in co-financing. By taking into account the total anticipated co-financing of more than USD 30 million to be disbursed during project implementation for green city investments, adding another 100 ktons of CO_{2eq} into the project direct GHG reduction target can be considered as a realistic and plausible target. **The total direct GHG reduction target of the project will thus be equal to 200 ktons of CO_{2eq}, from direct GHG emission reductions.** In monitoring the achievement of this target, the recommended GEF technology specific accounting methodologies will be used to the full extent.

Direct post-project emission reductions, are those to quantify the GHG emission reductions of GEF-supported revolving financial mechanisms that are still active after the project’s closure (ex-post)”. No direct post-project impact has been considered in the analysis since the GEF resources will be used as one-time capital grant without expected pay-back: i.e. no new loan or loan guarantee mechanism will be created with the GEF funds.

Consequential (or former indirect) **emission reductions** are typically achieved after the GEF project closure and occur outside of the project logical framework. Top-down and bottom-up approaches are recommended to estimate consequential emission reductions. Since these estimates rely heavily on assumptions and expert judgment regarding the GEF project investment and its assumed contribution to future market potential and penetration, consequential GHG emission reductions should be reported separately from direct and/or direct post-project GHG emission reductions. Consequential emission reductions are typically resulting from market facilitation and development through project-supported policy frameworks and institutional strengthening, capacity building and demonstrations proceeding through several steps such as “sustaining, mainstreaming, replication, scaling-up and market change.” **The estimated indirect GHG emission reductions from this project are estimated as 2.6 million tonnes of CO_{2e}.**

The methodologies recommended by the new Guidelines in the Framework for Urban Sector Projects are referred to as Urban Project Methodologies which are used to estimate the GHG emissions for the baseline and the alternative scenario. The new Urban Sector Framework was used to estimate emission reductions in three sectors, namely buildings, road transportation and waste by employing the following steps:

- a) WRI Standard to define the project, map the causal chain, define project boundaries, etc.;
- b) WRI Standard, section 8.4.3 to select one of the three recommended methods;
- c) WRI Standard alongside the chosen GHG accounting methodology to assess baseline emissions and alternative scenario emissions; and
- d) Estimate and report the emissions mitigation impact of the project.

The results and assumptions of this analysis for the anticipated consequential emission reduction impact of the project is presented in greater detail below.

Buildings

Project definition

Policy or action assessed

- Draft Low Emission Development Strategy of the RM until 2030. The current legislation requires the development of state standards for the use of renewable energy and for technical regulations, standardization, certification and methodological support of energy efficiency and renewable energy. They also insure development and introduction of Energy Performance Certificates for buildings and development of standards for compulsory energy audits for certain categories of consumers;
- Mitigation potential of national appropriate mitigation actions during 2016-2030: (i) wall insulation of dwellings; (ii) thermostats in rooms, programmable; (iii) automatic temperature regulators in public buildings, including day/night mode; (iv) replacing incandescent bulbs with LED; (v) installation of heat meters in each apartment; (vi) exploitation of biomass for energy purposes; (vii) heat pumps of small, medium and large capacity; (viii) using solar energy to produce hot water;
- Draft Law on Renewable Energy: The objective of this law is to achieve an energy share from renewable sources by at least 17% in gross final energy consumption in 2020, calculated in accordance with this Law. (there is percentage of renewable sources in 2030, also not reflected in the energy strategy by 2030, therefore the same 17% is considered for 2030)
- Energy strategy by 2030: It proposes that the contribution of renewable sources should be supplemented (with a 200 MW installed capacity), but it does not provide for a percentage increase in this contribution.

Data collection

Secondary data was collected before policy is implemented from main energy service providers as well as from national statistics.

- Electricity: Union Fenosa (official data request)
- Heat: Termoelectrica (official data request). Heat consumption in public buildings was calculated based on municipal expenditure on heat 116.758 millions MDL divided by the current heat tariff 898 MDL/Gcal
- Natural Gas: Moldova Gaz (official data request). According to national statistic the use of natural gas on national level during heating season (October – March) represent 77% of annual gas consumption. It was assumed that 60% of total natural gas sold to residential sector in Chisinau municipality is used for heating purposes.
- Coal: Chisinau Sustainable Energy Action Plan (SEAP)

Emissions factors:

- Electricity, Heat and Coal: Chisinau SEAP
- Natural Gas: IPCC 2006

During policy implementation and after implementation both primary and secondary data will be collected.

Primary data: Meter readings and direct monitoring

Secondary data: Main energy service providers and up to date studies and reports.

Mapping the causal chain

Policy and Actions	Intermediate effect	GHG effect
Share of renewable energies in annual electricity and heat generation by 17 %	Reduced demand for natural gas and other fossil fuels Reduced power generation from existing fossil fuel power plants Increase in power cost for consumers due to higher cost of renewable energy	Reduced emissions from grid electricity and heat Lower Grid Emissions Factor for both electricity and heat Reduced emissions from lower energy use due to increase cost of electricity
Replacing incandescent light bulbs with LED lamps	Reduced demand for electricity and consequently electricity generation	Reduced emissions from electricity use
Wall insulation of dwellings in 30% of buildings by 2030. Thermostats in rooms, programmable	Reduced demand for district heating and natural gas to heat residential and public buildings	Reduced emissions from heat use Reduced emissions from natural gas use (space heating) Increased emissions from manufacturing

Automatic temperature regulators in public buildings, including day/night mode Installation of heat meters in each apartment		
Exploitation of biomass for energy purposes Heat pumps of small, medium and large capacity Using solar energy to produce hot water	Reduced natural gas use Reduced coal use Reduced electricity generation for heating and cooling purposes	Reduced emissions from natural gas use (space heating) Reduced emissions from electricity use Reduced emissions from coal use

Project boundary

The reductions in CO₂ emissions from (i) grid electricity; (ii) district heating; (iii) reduced natural gas use; (iv) reduced coal use and (v) reduced electricity use are expected to be significant, so they are included in the GHG assessment boundary. The increase in emissions from increased production of goods and services and reduced emissions from lower energy use due to increase cost of electricity are expected to be insignificant based on initial estimates, so it is excluded from the boundary. The GHG effects are occurring within municipality boundary except emissions from electricity use which is outside this boundary. The GHG assessment period: 2021-2030.

GHG accounting

Baseline scenario

The baseline scenario is assumed to be the continuation of historical (2013) energy consumption in residential and public buildings. The 2006 IPCC Guidelines for National Greenhouse Gas Inventories as well as simple equation such as extrapolation were used for the GHG estimates.

Estimates of energy saving potential in residential multi-level and public buildings (ESCO project):

EE measure	Average energy savings in residential buildings	Average energy savings in public buildings
Roof insulation	4%	11%
Window replacement	14%	16%
Walls insulation	50%	36%
Installing individual heat substations	10%	8%
Buildings' internal heat distribution network retrofit	15%	8%

According to the national statistic, the population in Chisinau municipality grew with an average of 0.42% from 2008 to 2015. The same trend is assumed for the coming years and the population will increase by 7.6% in 2030 compared to 2013. As a consequence, the energy consumptions will increase. The following assumptions are considered for the 2030 baseline scenario.

Electricity:

- Increase of electricity consumption in the residential sector by 1.5% per year (increase based on an analysis of time series data on population grow and energy consumption)
- Share of renewable energies in annual electricity generation by 5 % (expert assumption based on current initiatives)

Heat:

- The number of apartments subject to EE improvements (consisting mainly of buildings built in 60's and 80's) remain connected to district heating.
- Share of renewable energies in annual heat generation by 5% (expert assumption based on current initiatives)
- Implementation of energy efficiency measures in 10% of buildings with an average energy savings of 50%. As per table above the energy saving potential can be higher (expert assumption based on current initiatives)

Natural gas:

- Fuel switching activities from natural gas to biomass by 8.5% (expert assumption based on current initiatives)

Coal:

- Fuel switching activities from coal to biomass by 17% (expert assumption based on current initiatives).

2030 Alternative scenario

Electricity:

- Increase of electricity consumption in the residential sector by 1% per year (Increase based on analysis of time series data on population grow and energy consumption with consideration of Low Emissions Development Strategy which aim at using LED bulbs)
- Share of renewable energies in annual electricity generation by 17 % (Draft Law on Renewable Energies)

Heat:

- The number of apartments subject to EE improvements (consisting mainly of buildings built in 60's and 80's) remain connected to district heating.
- Share of renewable energies in annual heat generation by 17 % (Draft Law on Renewable Energies).
- Implementation of energy efficiency measures in 30% of buildings with an average energy savings of conservative 50%. As per table above the energy saving potential is higher. Additional 15% of saving is assumed as a result of automatic temperature regulators, thermostats in rooms and installation of heat meters in each apartment (Low Emissions Development Strategy)

Natural gas:

- Fuel switching activities from natural gas to biomass by 25.5% (expert assumption based on Low Emissions Development Strategy)

Coal:

- Fuel switching activities from coal to biomass by 34% (expert assumption based on Low Emissions Development Strategy)

Results

2030 Baseline scenario - total 778 747 tCO_{2eq}:

Category	Grid energy		Fuel combustion	
	Electricity (MWh)	Heat (MWh)	Natural gas (GJ)	Coal (MWh)
<i>Residential Sector</i>	738 136	1 052 878	2 298 364	147 844
<i>Public buildings</i>	138 130	184 472	131 968	280
Total	876 266	1 237 350	2 223 754	148 124
Emissions factor	0,4057	0,2005	0,0561	0,3410
Emissions tCO ₂	355 457	248 027	124 753	50 510

2030 Alternative scenario - total 596 567 tCO_{2eq}:

Category	Grid energy		Fuel combustion	
	Electricity (MWh)	Heat (MWh)	Natural gas (GJ)	Coal (MWh)
<i>Residential Sector</i>	688 143	892 175	1 947 561	99 619
<i>Public buildings</i>	138 130	156 316	111 826	189
Total	826 273	1 048 491	1 534 243	99 807
Emissions factor	0,3544	0,1751	0,0561	0,3410
Emissions tCO ₂	292 839	183 622	86 071	34 034

Road Transportation

Project definition

Policy or action assessed

- Draft Low Emission Development Strategy of the RM until 2030
- Chisinau Public Transportation Strategy until 2025

Data collection

Primary and secondary data was collected before policy is implemented from National Registry, main transport services providers as well as from Chisinau Sustainable Energy Action Plan of Chisinau Municipality 2013-2020 (Chisinau SEAP).

Vehicles fleet:

- Cars: National Registry
- Taxis, minibuses, buses and trolleybuses: City Hall and municipal transport companies

Fuel use:

- Estimations of the BRC Business Plan (biggest company in Moldova specialized in converting cars on CNG), based on calculations on official technical data (diesel/gasoline fuel)

Average fuel consumption:

- Cars, Taxis, Minibuses, Buses: Chisinau SEAP
- Trolleybuses: Trolleybus Company reported that they paid 63 million MDL in 2013 for electricity (1.48 MDL/kWh) and the mileage of 16.8 million km. Up to 80% of total trolleybuses should be used during peak hours, but at the moment the company uses 85% of its park. Up to now, 50% of the municipal fleet of trolleybuses has been replaced with modern and energy efficient units (25% lower electricity consumption). Out of 330 trolleybuses in 2013, 210 of them were old brand ZIU=27.1 kWh, and 120 new trolleybuses ACSM=20.1 kWh as reported by the City Trolleybus Company. The average electricity consumption were 0.253 MWh/100km.

Average occupancy:

- Chisinau SEAP

Average trip distance km/year/vehicle:

- Cars, taxis: Chisinau SEAP
- Minibuses: City Transport Strategy 2014
- Buses: Reported by City Bus Company (total mileage / number of used buses)
- Trolleybuses: Reported by Trolleybus Company total mileage of 16.8 million km in 2013 divided to the number of used trolleybuses

Default emissions factors:

	IPCC 2006	Gasoline	Diesel	CNG
Default net calorific value GJ/t		44.3	43	47.3
Default CO2 emission factors t/GJ		0.0693	0.0741	0.0561
Default CH4 emission factors t/GJ		0.000033	0.000039	0.000062
Default N2O emission factors t/GJ		0.000032	0.000039	0.000002

Global warming potential: CH4 (21) and N₂O (310)

Grid Emissions Factor: Chisinau SEAP

During policy implementation and after implementation both primary and secondary data will be collected.

Primary data: Direct monitoring

Secondary data: Main transport service providers and up to date studies and reports.

Mapping the causal chain:

<i>Policy and Actions</i>	<i>Intermediate effect</i>	<i>GHG effect</i>
Substitution of gasoline with bioethanol in proportion of 10% of diesel oil with biodiesel in proportion of 10%	Reduced demand for fossil fuels Emissions per km traveled decreased	Reduced emissions from private and public transport
Tire labelling, purchasing energy efficient transport, transport optimization on central streets in cities and towns	Reduced travel time Reduced use of gasoline, diesel and CNG	Reduced emissions from private and public transport Reduced emissions from densification of the city
Prioritize the high-caliber and more ecological trolleybus, which should become the main public transportation category. Its share will increase from actual 35% to 75%, while minibuses will reduce their share from actual 60% to max. 10%.	Increased use of trolleybuses Increased electricity generation Reduced use of minibuses Reduced use of private cars Reduced use of gasoline, diesel and CNG Less transport units on streets and reduced travel time	Increased emissions from electricity generation Increased emissions from trolleybus manufacturing Reduced emissions from private and public transport

Project boundary

The reductions of emissions from private and public transport and the increase in emissions from electricity use are expected to be significant, so they are included in the GHG assessment boundary. The increase in emissions from trolleybus manufacturing is expected to be insignificant based on initial estimates, so it is excluded from the boundary. The GHG effects are occurring within municipality boundary except emissions from electricity generation which is outside this boundary. The GHG assessment period: 2021-2030.

GHG accounting

2030 Baseline scenario

According to national statistic the population in Chisinau municipality grew with an average of 0.42% from 2008 to 2015. The same trend is assumed for the coming years and the population will increase by 7.6% in 2030 compared to 2013. As a consequence the use of private and public transport will increase. The following assumptions are considered for the baseline scenario.

- Increasing the use of cars by 1%/year (Chisinau Public Transportation Strategy)
- Energy efficient transport - 10% of annual consumption (expert assumption - higher Euro standards by 2030)
- Increasing the number of new trolleybuses by at least 20 units/year and replacement of 10 old ones/year (current on-going initiative of Chisinau City Hall and Trolleybus Company which is not reflected in the CPT Strategy)
- Old trolleybuses replaced by modern and energy efficient ones (20.1 kWh) or even more efficient which will lead to an average fuel consumption per unit of 0.212 MWh/100 km
- Minibuses reduced by 30%. According to Chisinau Public Transportation Strategy only 4 minibuses lines will be canceled but it does not take into consideration the on-going initiative of Chisinau City Hall and Trolleybus Company to assembly at least 20 new trolleybuses per year as well as trolleybuses on battery (without wires), for suburban and peripheral destinations which were already tested in 2015. According to the testing, such trolleybus has autonomy up to 52 km millage, later requiring minimum 40 minutes charging time. With this initiative it is assumed that at least 30% of minibuses will be replaced by trolleybuses.
- More traffic jams and increases in the emissions by 5% (expert assumption).

2030 Alternative scenario

- Increasing the use of cars by 0.5%/year (Chisinau Public Transportation Strategy)
- Substitution of gasoline with bioethanol in proportion of 10% of diesel oil with biodiesel in proportion of 10% (Low Emissions Development Strategy)
- Tire labeling, purchasing energy efficient transport, transport optimization on central streets in cities and towns - 20% of annual consumption (Low Emissions Development Strategy)

- Increasing the number of new trolleybuses by 40 units/year and replacement of 10 old ones/year (Chisinau Public Transportation Strategy)
- Old trolleybuses replaced by modern and energy efficient ones (20.1 kWh) or even more efficient which will lead to an average fuel consumption of 0.212 MWh/100 km
- Minibuses reduced by 94% (Chisinau Public Transportation Strategy)
- Busses reduced by 7% (Chisinau Public Transportation Strategy)

Results

2030 baseline scenario - total 685 547 tCO_{2eq}:

Indicators	Cars			Taxi			Minibus		Bus	Trolleybus
	Gasoline	Diesel	CNG	Gasoline	Diesel	CNG	Gasoline	Diesel	Diesel	Electricity MWh
Vehicle fleet, units	214814			1950			1274		84	500
Fuel use	40%	40%	20%	2%	5%	93%	5%	95%	100%	100%
Average fuel cons. l/100 km	9,0	7,2	9,9	9,0	7,2	9,0	12,6	10,8	31,5	0,212
Aver. dist. '000 km/yr/vehicle	10			90			42,6		83,7	64,62
Total fuel cons. tons/year	81 200	64 960	44 660	332	663	15 424	359	5 847	2 325	71 922
Total fuel cons. GJ/year	3 597 152	2 793 274	2 112 413	14 694	28 526	729 547	15 904	251 411	99 994	
CO2 emissions tCO ₂ /year	249 283	206 982	118 506	1 018	2 114	40 928	1 102	18 630	7 410	25 490
CH4 emissions tCO ₂ /year	2 493	229	2 750	10	2	950	11	21	8	
N ₂ O emissions tCO ₂ /year	3 568	3 377	131	15	34	45	16	304	121	
Total emissions tCO _{2eq}	255 344	210 587	121 388	1 043	2 151	41 923	1 129	18 954	7 539	25 490

2030 alternative scenario - total 510 176 tCO_{2eq}:

Indicators	Cars			Taxi			Minibus		Bus	Trolleybus
	Gasoline	Diesel	CNG	Gasoline	Diesel	CNG	Gasoline	Diesel	Diesel	Electricity MWh
Vehicle fleet, units	199 208			1 950			291		84	780
Fuel use	36%	36%	20%	2%	5%	93%	5%	86%	90%	100%
Average fuel cons. l/100 km	8,0	6,4	8,8	8,0	6,4	8,0	11,2	9,6	28,0	0,212
Aver. dist. '000 km/yr/vehicle	10			90			42,6		83,7	64,62
Total fuel cons. tons/year	57 372	45 898	35 061	253	505	13 057	63	1 018	1 969	106 856
Total fuel cons. GJ/year	2 541 578	1 973 595	1 658 368	11 195	21 734	617 606	2 770	43 783	84 651	
CO2 emissions tCO ₂ /year	176 131	146 243	93 034	776	1 610	34 648	192	3 244	6 273	37 871
CH4 emissions tCO ₂ /year	1 761	162	2 159	8	2	804	2	4	8	
N ₂ O emissions tCO ₂ /year	2 521	2 386	103	11	26	38	3	53	102	
Total emissions tCO _{2eq}	180 414	148 791	95 296	795	1 639	35 490	197	3 301	6 383	37 871

Waste

Project definition

Policy or action assessed

- Waste Management Strategy 2013-2027
- Draft Waste Law
- Draft Low Emission Development Strategy of the RM until 2030: (i) the construction of mechanical-biological treatment center in Region 4 - min. Chisinau and other cities and (ii) biogas recovery from municipal solid waste landfill in Tintareni.

Data collection

Within the area of Chisinau city, the municipal company "Autosalubritate" is responsible for collection, transportation and disposal of municipal waste as well as for operation of landfills. Currently, only 2% of waste is recycled. According to the Waste Management Strategy (2013-2027) the rate of the daily produced waste by a person in Chisinau city is 1.3 kg. Activity data was collected from the municipal company "Autosalubritate".

Parameters and their values used for calculation:

<i>Parameter</i>	<i>Value</i>	<i>Source</i>
Fraction of degradable organic carbon (DOC) that decomposes under the specific conditions occurring in the SWDS for year γ (weight fraction)	0.5	IPCC 2006 Guidelines
Amount of solid waste disposed in the SWDS in the year	Calculated	
Average fraction of the waste type in the waste (weight fraction) <ul style="list-style-type: none">• Wood, wood products, straw• Food, food waste• Pulp, paper, cardboard (other than sludge)• Textiles• Non-food organic putrescible garden and park waste• Glass, plastic, metal, other inert waste	1.76 56.83 5.28 2.59 0 33.54	Estimated based on information from the SWDS owner.
Oxidation factor	0.1	IPCC 2006 Guidelines
Fraction of methane in the SWDS gas (volume fraction)	0.5	IPCC 2006 Guidelines
Methane correction factor for year	0.8	IPCC 2006 Guidelines
Fraction of DOC in the waste type (weight fraction) <ul style="list-style-type: none">• Wood, wood products, straw• Food, food waste• Pulp, paper, cardboard (other than sludge)• Textiles• Non-food organic putrescible garden and park waste• Glass, plastic, metal, other inert waste	43 40 15 24 20 0	IPCC 2006 Guidelines
Decay rate for the waste type <ul style="list-style-type: none">• Wood, wood products, straw• Food, food waste• Pulp, paper, cardboard (other than sludge)• Textiles• Non-food organic putrescible garden and park waste• Glass, plastic, metal, other inert waste	0.03 0.06 0.185 0.06 0.10 0	IPCC 2006 Guidelines

During policy implementation and after implementation both primary and secondary data will be collected.

Primary data: Direct monitoring

Secondary data: Municipal company "Autosalubritate" and up to date studies and reports.

Mapping the causal chain

<i>Policy and Actions</i>	<i>Intermediate effect</i>	<i>GHG effect</i>
Installations of biogas recovery system of 825 kW at Tintareni landfill	Methane recovered for energy purposes	Reduced emissions from displacement of fossil fuel based grid electricity
Reduction of biodegradable fractions of waste deposited at solid waste disposal by their composting	Increased transport activities Decreased landfilling of organic waste Landfill space used at lower rate	Increased GHG emission from composting Decreased CH4 emission from waste disposal sites Net carbon storage due to composting Reduced emissions from displacement of nitrogen fertilizers Increased transport related GHG emissions due to waste and compost transportation

Project boundary

The reductions in GHG emissions from (i) grid electricity; (ii) solid waste disposal site and increase in GHG emissions from composting activities are expected to be significant, so they are included in the GHG assessment boundary. The increase in emissions from transportation activities is expected to be insignificant based on initial estimates, so it is excluded from the boundary. The reduced N₂O emissions from displacement of nitrogen fertilizer have a moderate magnitude but due to limited time and lack of activity data it is excluded from the GHG assessment boundary. The GHG effects are occurring outside of Chisinau municipality boundary. The GHG assessment period: 2021-2030.

GHG accounting

2030 Baseline scenario

No technological measures will be undertaken and no significant changes in the solid waste sector. The trend of annual increase storage capacity by 5% is assumed (as referred in the Waste Management Strategy) and the total national GHG emissions are expected to increase by 27.4 % in 2030 against 2013 level.

2030 Alternative scenario

Considers the trend in solid waste generation, as referred in the Waste Management Strategy with installations of biogas recovery system and the basis of draft Waste Law, which provides for the reduction of biodegradable fractions of waste deposited at solid waste disposal sites, otherwise speaking biodegradable waste will be collected separately and transported to composting plants or individual composting platforms. The emissions are expected to decrease by 48.5% against 2013 level.

Difference between the alternative and baseline scenario

The GHG effect of policies and actions were assessed in three sectors; (i) buildings; (ii) road transportation and (iii) waste. The GHG consequential effect was calculated for cumulative 10 years after project completion in 2020.

Total net change in GHG emissions resulting from the policy or action (kt CO₂e) = Total net policy scenario emissions (kt CO₂e) – Total net baseline scenario emissions (kt CO₂e)

Annual AS emissions	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Buildings	786.0	785.2	784.4	783.6	782.8	782.0	781.2	780.4	779.6	778.7	7 823.9
Road Transp.	658.9	661.8	664.8	667.8	670.7	673.7	676.6	679.6	682.6	685.5	6 722.0
Solid Waste	666.3	675.9	685.4	694.9	704.4	713.9	723.4	733.0	742.5	752.0	7 091.7
Total kt CO₂e	2 111.2	2 122.9	2 134.6	2 146.3	2 157.9	2 169.6	2 181.3	2 193.0	2 204.6	2216.3	21 637.6
Annual BS emissions	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Buildings	700.3	688.8	677.3	665.7	654.2	642.7	631.1	619.6	608.1	596.6	6 484.4
Road Transp.	576.3	569.0	561.6	554.3	546.9	539.6	532.2	524.9	517.5	510.2	5 432.5
Solid Waste	455.5	438.6	421.8	405.0	388.1	371.3	354.5	337.6	320.8	303.9	3 797.1
Total kt CO₂e	1 732.1	1 696.4	1 660.7	1 625.0	1 589.3	1 553.5	1 517.8	1 482.1	1 446.4	1 410.7	15 714.0

Difference (AS - BS)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Buildings	85.7	96.4	107.2	117.9	128.6	139.3	150.0	160.7	171.5	182.2	1 339.6
Road Transp.	82.5	92.8	103.2	113.5	123.8	134.1	144.4	154.7	165.1	175.4	1 289.5
Solid Waste	210.9	237.2	263.6	289.9	316.3	342.6	369.0	395.4	421.7	448.1	3 294.6
Total kt CO₂e	379.1	426.5	473.9	521.3	568.7	616.1	663.4	710.8	758.2	805.6	5 923.6

Consequential GHG Emission Reduction Impact of the Project

For **consequential** (or former indirect) **emission reduction** top-down estimates, the causality factor introduced already by the previous GEF guidelines will be used to assess the percentage of a realized market potential that can be reasonably attributed to the long-term effect of a project as the result of overcoming market barriers.

Level 5 = 100 %	The GEF contribution is critical and nothing would have happened in the baseline.
Level 4 = 80 %	The GEF contribution is dominant , but some of this reduction can be attributed to the baseline.
Level 3 = 60 %	The GEF contribution is substantial, but modest indirect emission reductions can be attributed to the baseline.
Level 2 = 40 %	The GEF contribution is modest , and substantial indirect emission reductions can be attributed to the baseline.
Level 1 = 20 %	The GEF contribution is weak , and most indirect emission reductions can be attributed to the baseline.

Given the scope of the project and the top-down greenhouse gas emission reduction assessment presented above, a conservative causality factor at the level 2 is considered as appropriate for this particular case. As such, the consequential GHG emission reduction Impact of the project can be assessed at 40% x 5 923.6 ktons of CO_{2eq}, which equals to about **2.4 million tons of CO_{2eq}**.

Given the nature of the project, the estimates on the consequential GHG emission reduction impact based on a bottom-up approach was not considered as applicable.

Annex G: Selected baseline initiatives, lessons learned and incrementality of GEF support, incl. examples and options for pilot/demonstration projects to be supported

In response to the STAP request (STAP comment # 4) for a more detailed assessment of the baseline initiatives and the inclusion of a section on "Lessons learned", the narrative below is summarizing some key findings of this assessment as it concerns a particular subsector to be addressed by the Moldova Sustainable Green Cities Project (MSGCP). International lessons learned on innovation centers in the light of the general concept and idea of the Green City Lab (GCL) have already been discussed in chapter III of the project document and, therefore, it is not repeated here.

Furthermore, several concrete pilot/demonstration project ideas for each specific subsector are presented, together with a discussion on their anticipated results and overall objective. Given the envisaged role and purpose of the Green City Lab (GCL), it is considered as essential, however, that the final selection of the supported pilot/demo projects will only be done and their design finalized during the actual implementation of the project, so as to allow the GCL to follow a commercial approach and to apply the proposed participatory planning and the search for new innovative approaches in practice rather than forcing them to just act as a project implementation unit for already fully predefined and developed pilot/demonstration projects. The proposed approach will also allow the GCL to take fully into account the eventual policy and other changes that may take place between the initial project development and the actual start-up phase as well as full advantage of the emerging new opportunities and financing options in accordance with the business plan and business model for the GCL.

While the GCL is left with the required freedom and flexibility to define and finalize the design of the first pilot/demonstration projects that best seem to contribute to reaching the project objective, this is to be done by relying on the overall project framework and the set targets as defined in the project document and the project results framework, against which the anticipated or achieved results of the pilot/demonstration will be assessed during the project mid-term review and final evaluation. Such specific framework conditions and targets include the following:

- By following a participatory planning approach, at least one pilot/demonstration project shall be developed and implemented for each of the targeted substance areas, namely i) integrated and participatory urban land use and mobility planning; ii) residential building energy efficiency and renewable energy use; iii) low carbon mobility; and iv) resource efficient waste management;
- The participatory planning approach will be established by refining and calibrating the suggested demonstration project areas in consultation with the recipient community or service users fostering an atmosphere of trust and visible results and benefits.
- For the sum all specific pilot projects, the share of the GEF grant will not represent more than 20% of the total project cost (where Total Project Cost = GEF grant + co-financing). However, for some individual projects the GEF co-financing amount may be higher and for other demonstration projects it may be lower as long as overall the GEF grant does not exceed 20% of total cost of all the demonstration projects. The aim of the pilot projects is to provide a cost-effectiveness of USD 10 per ton of CO₂eq reduced, whichever comes first. Other criteria in project selection will be that the projects supported directly by GEF funding shall collectively generate direct GHG emission reduction of at least 100 ktons of CO₂eq over the calculation period of 20 years and can present an adequate MRV plan in the project design to monitor and verify this;
- The direct beneficiaries of the supported projects should reach at least 20,000 people, taking into account gender considerations meaning that demonstration projects should not directly benefit not more than 60% of persons from the same gender; and
- The supported pilot/demonstration project that receive direct GEF cost-sharing shall collectively leverage at least USD 8-10 million in co-financing and with a potential to leverage another USD 20 million by the end of the project by their effective replication or scaling up.

A more detailed discussion on the type and nature of pilot/demonstration projects that shall be considered for further development and implementation by the GCL (once established) include the following:

Demonstration Project #1	Urban Planning
Project Name	Neighborhood Renewal Green Urban Demonstration Project
Type	TA and Investment
Location	Urban area of Chisinau municipality, the place will be selected through a fully participatory and consultative process with the key stakeholders of the neighborhood under consideration. Priority will be given to neighborhoods that can demonstrate an active and functioning Home Owners Association.
Objective of Demonstration	To demonstrate the benefits of community capacity building and behavior change allied to tangible investments in the deep refurbishment of at least one existing neighborhoods in Chisinau
Baseline Initiatives	<p>The UNDP ESCO Moldova Project has assisted the Chisinau Municipality in procuring the development of an updated General Urban Plan (PUG) with a view to this being a Green Urban Development Plan. The envisaged outcome of an updated PUG or recommendations to improve this plan have been delivered by the ESCO Moldova project in the form of a Practice Guide to inform the ToR for the procurement of the PUG. While some diverging views within the municipal administration on the updating needs of the PUG in general has to some extent slowed down this process, the mentioned documents have been considered as useful to assist in everyday decision making in the interim period.</p> <p>Another activity to be mentioned is the bid of the Chisinau Municipal Council for funding from the Romanian Government for river restoration and flood management measures aligned to regeneration of the Bic River Basin crossing the Chisinau City and which is considered as one of the most polluted and degraded rivers in Moldova.</p>
Lessons learned	The technical advice provided to the Municipality under the UNDP ESCO Moldova project has been well received, but the political process of developing and adopting a statutory plan is a long process. Key areas of concern lie around the green infrastructure of the city and a strategic approach to this would need to inform the emerging PUG. The current statutory planning system provides little guidance for this. The national standards (SNIPS) are also holding back innovation and green solutions. The Ministry of Regional Development and Construction (MoRDC) will be a key stakeholder in terms of these being updated in the medium to long term, with solutions being demonstrated through the implementation of successful projects.
GEF Resources Tentatively Allocated for Support (and as a % of overall total project cost)	\$205,000 (17.01%)
Use of GEF Resources Described	<p>Technical assistance: \$25,000</p> <p>Investment: \$180,000</p> <p>The overall budget of the project includes costs related to local and international consultants, organization of participatory events, community capacity building, behavior change programs and investments (procurement of equipment and works)</p>
Co-Financing Amount	\$1,000,000, provided by Municipality of Chisinau
Use of Co-Financing Described	The Co-financing will be used to cover the costs for technical design documentation for the all works, realization of works regarding green spaces creation/improving, water pipelines and other works identified through feasibility study elaboration. Potential interventions include external wall

	insulation, improvements to the heating system and metering, new windows and doors, rainwater harvesting and SUDS, cycle storage, local food projects (allotments), green roofs, community facilities, public realm and access improvements for the elderly and disabled. This could be allied to renewable and decentralized energy and grid demand response technology.
Results – Estimated Payback period	Payback period should be not more than 17 years, which is an average of the depreciation period for the equipment and public non-generating income infrastructure
Sustainability of the Demonstration (Payback period with and without GEF grant)	If Payback period without GEF grant will be 17 years, with grant it will constitutes 12-14 years
Brief Description of Demo Project	<p>The project will include soft (technical assistance) and hard (investment) activities. Soft activities are related to technical assistance for the project ensured by the GCL and additionally involving external expertise, as required. It will include elaboration of the concept, feasibility study and adjusting of technical documentation for the planned works and organization of public consultations/information. Also, an extensive programme of community capacity building, support for HOA's and programmes tackling worklessness, social innovation, lifestyle and health will underpin the physical investments in the buildings and public realm.</p> <p>The request of the Mayor of Chisinau for the Moldova Sustainable Green Cities Project (MSGCP) during its preparation was to support a small number of "tactical" deliverables to provide a research basis for the emerging plan and a tool to influence the planning decisions. The Practice guide prescribes a 'Green Design Code' for both existing and new buildings and a Green Infrastructure Strategy to inform the new spatial plan in the form of the PUG and to provide a degree of protection for green spaces and ecosystems to contribute to the flood management strategy of the City. The MSGCP through the GCL can support further elaboration of a 'Green Design Code' and 'Green Infrastructure Strategy' to inform the PUG in the future and provide a policy basis for decision-making and identification of priority green city development areas within the municipality to form the basis on targeting zonal planning and the piloting of other innovative integrated approaches.</p> <p>Hard activities are related to realization of some investments in accordance with elaborated green zonal plans and can refer to:</p> <ul style="list-style-type: none"> Rainwater harvesting, Local food - Est. \$1000 per apartment; Solar Hot Water/PV- PV @ \$1500 per KW; Green spaces creation/improving, land arrangements and other investments; Energy efficiency measures allied to visual amenity; <p>The GCL in cooperation with municipality, MiLab and consultancy support (international and national) will develop the programme of events and refine the project prior to implementation. The GCL may consider to enter the demonstration project as a service provider on a fee for service basis or as an ESCO using EPC – Energy Performance Contract modality. This will be determined at a later date once the business model for GCL is better defined.</p>
Incremental value added and Global Environmental Benefits	Given the nature and the scope of the proposed MSGCP contributions to urban planning as described above, the GHG reduction impact from these pilot/demo initiatives will primarily be an indirect one (estimated as 2,225,000 tonnes of CO2eq) by testing and, as applicable, demonstrating the viability and benefits of

	<p>new participatory green city planning processes and methodologies, which have not been used in Moldova before. At the same time, however, they will provide the necessary basis and platform for the related green city infrastructure investments to come later.</p> <p>As indicated by the co-financing letter of Chisinau municipality, the available budgetary resources to extend a holistic integrated urban green city planning approach into the city district and zonal level by using the Green City Lab as a vehicle for that are expected to reach USD 3.6 million per year or USD 18 million over the next 5 years. Therefore, by some small strategic investments into specific neighborhood renewal projects, which have been identified and further developed through a fully participatory and consultative process with the key stakeholders of the neighborhood under consideration, while also keeping in mind the common project GHG reduction and other criteria discussed before, the replication potential can be significant both in terms of the applied processes and methodologies as well as the measures chosen for further funding, thereby supporting the cost-efficient use of the GEF resources.</p>
Indicators to be used to evaluate the success or failure of the demonstration projects	Direct GHG emission reduction, number of beneficiaries, indices of deprivation, use of public realm, liters of potable water saved.

Demonstration Project #2	Urban Planning
Project Name	Elaboration of at least one Zonal Plan under the emerging or updated PUG for Chisinau
Type	TA and investments
Location	The location of the Zonal Plan will be based upon the use of previously developed (brownfield) land, the capacity of the area to support additional or improved green infrastructure, a proportion of existing communities and within walking or cycling distance of the City Centre. Suggestions include the Bic River Basin (benefitting from a \$4M river restoration project and brownfield development opportunities close to the City Centre), the former barracks site alongside the Moldexpo Centre, including the existing neighborhood and Tracom (extending the commercial and office uses to a mixed-use innovation district)
Objective of Demonstration	Ensuring the efficient use of previously developed land and green urban regeneration in specific zones of Chisinau.
Baseline Initiatives	<p>The UNDP ESCO Moldova Project has assisted the Chisinau Municipality in procuring the development of an updated General Urban Plan (PUG) with a view to this being a Green Urban Development Plan. The envisaged outcome of an updated PUG or recommendations to improve this plan have been delivered by the ESCO Moldova project in the form of a Practice Guide to inform the ToR for the procurement of the PUG. While some diverging views within the municipal administration on the updating needs of the PUG in general has to some extent slowed down this process, the mentioned documents have been considered as useful to assist in everyday decision making in the interim period.</p> <p>Another activity to be mentioned is the bid of the Chisinau Municipal Council for funding from the Romanian Government for river restoration and flood management measures aligned to regeneration of the Bic River Basin crossing the Chisinau City and which is considered as one of the most polluted and degraded rivers in Moldova.</p>
Lessons learned	Key areas of concern lie around the green infrastructure of the city and a strategic approach to this would need to inform the emerging PUG. The current

	<p>statutory planning system provides little guidance for this. The national standards (SNIPS) are also holding back innovation and green solutions. The Ministry of Regional Development and Construction (MoRDC) will be a key stakeholder in terms of these being updated in the medium to long term, with solutions being demonstrated through the implementation of successful projects.</p>
GEF Resources Tentatively Allocated for Support (and as a % of overall total project cost)	\$150,000 (3,75%)
Use of GEF Resources Described	<p>Technical assistance: \$50,000 Investments: \$100,000</p> <p>Support through the Green City Lab of the MSGCP will be provided for the elaboration of zonal and detailed plans as elements underneath the PUG and which, as appropriate, can be developed in parallel to ensure that innovations are integrated into the emerging PUG.</p>
Co-Financing Amount	About \$ 4,000,000 provided by Municipality of Chisinau
Use of Co-Financing Described	<p>The co-financing includes the complex arrangement works on the Bic river on the length of 2.04 km by consolidating the river sides and riverbed with reinforcing (using modern solutions / technologies), construction of 3 facilities for water retention, equipped with folding staves to form extended surfaces, with depth up to 2,5 m to ensure the min. level of water in the river in hot periods. Investment component will target riverside areas with the aim of eco-remediation.</p>
Results – Estimated Payback period	Not more than 20 year, which is the life period of the plans.
Sustainability of the Demonstration (Payback period with and without GEF grant)	<p>The GEF grant will facilitate the Zonal Planning of areas that are currently undeveloped and ‘stuck’ due to multiple constraints. The project will ‘de-risk’ development in these areas, releasing land values in public ownership that can be recycled into green investments. The payback period with grant will be about 16-18 years.</p>
Brief Description of Demo Project	<p>Technical assistance will be realized by GCL involving external expertise (national and international) and Chisinau municipality’s architecture department for elaboration of the min. 1 (one) zonal plan which will inform the beneficiaries how to better realize the planned works and to install the small architectural elements. This will complement planned investments of the Chisinau municipality for 2, 04 km of Bic river restoration and consolidation in accordance to elaborated Green Zonal Plan. GCL will participate on the project on a fee for service basis. The GCL could facilitate public participation in elaboration of a zonal plan for the urban regeneration of the river basin zone in the area where the flood management and river consolidation measures are planned, thereby representing one prospective pilot area for project’s green land use and mobility planning component and construction of related infrastructure.</p> <p>In the areas of potential housing growth, the land value will be recycled into the regeneration of the area, catalyzing construction of new homes and refurbishment of existing neighborhoods in the area. The GCL will closely cooperate with the municipality in design of works for Bic river, and will also use UNDP’s MiLab capacity to design mechanism for better Zonal Planning. For the proposed/planned regeneration of the Bic River Basin, the GCL can facilitate public participation in elaboration of a zonal plan for the urban regeneration of the river basin zone in the area where the flood management and river</p>

	consolidation measures are planned, thereby representing one prospective pilot area for project's green land use and mobility planning component and construction of related infrastructure.
Incremental Value Added and Global Environmental Benefits	The local neighborhoods will benefit from attractive, accessible and safe environments where people can get closer to nature, whilst also being close to jobs and services promoting sustainable and healthy travel choices. River restoration, lakeside development and additional green infrastructure providing ecosystem services will help to create quality natural environments. The regeneration of brownfield land and the restoration of the River Bic provides an opportunity to create a new sustainable quarter within Chisinau that showcases the best approaches to new development whilst also cross-subsidizing the required investment in existing buildings, spaces and infrastructure.
Indicators to be used to evaluate the success or failure of the demonstration projects	Hectares of brownfield land brought into economic use, the number of new homes created and refurbished, the amount of land taken out of flood risk, area of new green infrastructure created, hectares of natural flood management, ecosystem services related to flood management through reduced costs of managing pluvial and fluvial risks.

Demonstration Project #3	Sustainable Urban Mobility – Battery Powered Trolleybuses
Project Name	Elaboration of a Sustainable Urban Mobility Plan (SUMP) allied to improvements in the urban transport network.
Type	TA and Investment
Location	The SUMP will be citywide in scope, identifying multi-modal mobility for all. The location of the investments to be made will be selected based on the Sustainable Urban Mobility Plan elaborated through a fully participatory and consultative process with professional planners, communities, policy makers and key stakeholders.
Objective of Demonstration	To reduce air and noise pollution, greenhouse gas emissions and energy consumption by the public and private transport in the Chisinau city.
Baseline Initiatives	For public transportation, the Chisinau Municipality (CM) has prioritized the use of electric trolley busses with the planned increase of their share from the current 35% to 75% by 2025, while the share of minibuses is sought to be reduced from the current 60% to max. 10%. With the EU and EBRD support since 2011, over 50% of the municipal trolleybus fleet has been renewed with more modern and energy efficient busses with 25% less electricity consumption compared to the old busses. This process is continuing based on the assembly of the Belarussian ACSM/STADLER model by the City Trolleybus Company with 60 new busses assembled during 2012-2015. The CM is also looking at the development of a pilot battery powered trolleybus, which would be more flexible and not restricted by the electric grid. The Municipality has recently developed also a Public Transport Development Strategy focusing solely on public transport. Under the Local Service Development project, the World Bank is planning to support the development a number of soft measures around sustainable transport in partnership with the existing (also WB supported) E-Government Center, including some emerging ideas around a mobility app for smart phone

	deployment. The ongoing EBRD funded Municipal Street Refurbishment Project is supporting the ease of movement for pedestrians making walking more attractive. There is no specific provision for cycling and public transport in the project, however.
Lessons Learned	What has been characteristics for many past and ongoing transport sector initiatives is that they have been developed in isolation and have not addressed the fundamental underlying mobility challenges within the Municipality concerned. This, on the other hand, has led to investments, which are not complementary, which potentially may work against each other or are causing new problems. As an example, increasing the number of trolleybuses has increased the congestion in many streets of Chisinau.
GEF Resources Tentatively Allocated for Support (and as a % of overall total project cost)	\$ 380,000 (12.6%)
Use of GEF Resources Described	<p>Technical assistance: \$130,000</p> <p>Investment: \$ 250,000</p> <p>The Chisinau municipality has a public transport strategy, but it doesn't have yet a Sustainable Urban Mobility Plan, which would combine urban development, innovation and sustainability; put the policy focus on environment and life quality; adopt an integrated approach to urban mobility management; and define priorities, tools and resources. The MSGCP is proposed to support the elaboration of a Sustainable Urban Mobility Plan (SUMP) in line with international best practice, using the resources of the GCL, municipality and consultancy support. Through the SUMP elaboration and participatory planning, assist the Municipality in developing guidance for street design taking into consideration the green aspects and civil society participation/opinion and directly influence the current project and the development of future funding bids. The project will work closely with the E-Government Centre to avoid overlaps and secure economies of scale and capitalize on the associated tech cluster whilst also exploring co-operation opportunities and maintaining close links with the WB feasibility studies and planned support under Local Service Development project in project development and implementation.</p>
Co-Financing Amount	\$ 3,000,000 provided by Municipality of Chisinau
Use of Co-Financing Described	<p>Investments in battery-powered trolleybuses extending the network as identified in the SUMP, cycle lanes on strategic routes, real time information, travel planning for major employers, congestion charging.</p> <p>All investments based on the outcome of the SUMP.</p>
Results – Estimated Payback period	The payback period should be not more than 10 years as for an income generating public transport infrastructure project
Sustainability of the Demonstration (Payback period with and without GEF grant)	The payback period with GEF grant will be about 8 years
Brief Description of Demo Project	TA will be provided by GCL with involvement of external expertise, national academic partners in the field of urban transport infrastructure and Chisinau Municipality, and will consists of: realization of surveys, organization of public events, elaboration of the mobility plan for Chisinau city and procurement of soft for transport monitoring and training of the municipal public transport operators in implementation, monitoring and evaluation of the Mobility plan. In addition, the GCL could prepare a feasibility study for the battery powered trolleybuses.

	<p>The indicative budget:</p> <p>Possible sustainable mobility/transport investments which would be possible to be realized in compliance with elaborated Urban Mobility Plan could be the following: Trolleybus improvement, Signage, mapping and way-finding (walking, cycling, parking etc, Segregated cycle lane, Congestion charge pilot, , Safe routes to school pilot, municipal lighting and different APP for example for public transport (Amsterdam GVB App), Mobility App (e.g. CityMapper), E-Ticketing etc. Principle of the single investment to be decided are based on the following criteria: (i) Investments securing the maximum GHG reduction; (ii) Number of beneficiaries; (iii) Visibility; (iv) Co-financing opportunities (Public Transport Companies etc.); (v) Replicability. The GCL in cooperation with platform partners (academic institutions), Chisinau municipality, MiLab and IT partners will manage the elaboration of the SUMP.</p>
Incremental Value Added and Global Environmental Benefits	<p>As indicated above, the pilot/demonstration projects for low carbon mobility will primarily focus on encouraging a modal shift from the use of private cars to public and non-motorized transport with a focus on battery powered trolleybuses. This can be supported, for instance, by investments on new ICT technologies to make the travel planning easier, construction of new intermodal changing facilities, improving the safety and comfort of non-motorized and public transport by new infrastructure and travel fleet etc. As recorded in the co-financing letter of Chisinau municipality, the City is planning to invest USD 3 million per year (or USD 15 million over 5 years) for the renewal of its fleet with a target to have it 100% electric by 2036. These investments can be complemented and further supported by targeted investments of the Green City project by considering the options and criteria listed above.</p> <p>The overall cumulative GHG reduction potential from facilitating such a modal shift together with other urban transport related measures was assessed at close to 1.3 million tons of CO₂eq by 2030, thereby supporting the cost-efficiency of the proposed actions. For further details, a reference is made to Annex F “GHG Emissions Reduction Analysis”.</p>
Indicators to be used to evaluate the success or failure of the demonstration projects	<p>Modal shift towards sustainable transport choices, km of cycle lanes, trolleybus ridership on specific lines, numbers of schoolchildren walking to school, use of mobile apps, Number of safe routes to school (0 – x)</p> <p>Air quality in city center*</p> <p>Annual daily mean of NO_x emissions.</p> <p>Annual daily mean of O₃ emissions.</p>

Demonstration Project #4	Building Energy Efficiency
Project Name	EE retrofit project for a typical multi-apartment residential building
Type	TA and Investment
Location	In Chisinau city, the building will be selected through a fully participatory and consultative process with municipality and key stakeholders and residents with priority given to those buildings with a fully functioning HOA, however it should be linked to specific neighborhood allied to the Project 1 at the extent possible.
Objective of Demonstration	To improve energy efficiency in the residential sector
Baseline Initiatives	Urban residential housing stock currently accounts for about 40% of the total residential floor area. Its energy consumption and climate-related impact is exacerbated due to considerable heat and electricity losses from the distribution

grids and the buildings themselves. As of 2013, close to 80% of all residential buildings in urban areas were connected to district heating with heat losses already in distribution estimated at 22% of the total heat supplied, which is to be compared to max. 5-10% of modern well maintained DH networks.

As it concerns the energy consumption of the building themselves, the research conducted for the preparation of the ongoing UNDP ESCO Moldova project concluded that in comparison with countries with similar climatic conditions, the public buildings in Moldova should have average energy consumption for heating at 80-100 kWh/m²/yr, while in the multi-apartment residential buildings this should correspond to about 60-75 kWh/m²/yr. Based on the audits made, the current energy consumption for heating in public/institutional buildings is typically in the range 140-180 kWh/m²/yr and in the multi-apartment residential buildings 110-140 kWh/m²/yr, thereby indicating significant energy saving potential.

There are in total around 6,900 multi-apartment residential buildings in Moldova, of which 70% are administered by local government, 7-8% by condominium associations and 17-19% by cooperatives and homeowners' associations. Some 50-66% of the common properties of privatized housing stock has remained in the ownership of local authorities.

The ongoing World Bank District Heating Efficiency Improvement Project is supporting the Government of Moldova on the district heating debt restructuring, while also providing technical assistance for corporate restructuring process of the newly integrated utility, Thermoenergetica. In order to improve the operational efficiency and financial viability of the DH company and to improve the quality and reliability of heating services delivered to the population of Chisinau, the project has also invested in various supply side energy efficiency and retrofit measures such as (a) modernization of selected pumping stations to reduce electricity consumption and facilitate more efficient variable flow operation mode of the DH system; (b) rehabilitate selected segments of the distribution network; (c) replace old and inefficient central heat substations (CHS) with modern fully automated individual building level heat substations (IHS); and (d) reconnect about 40 disconnected public buildings to improve the usage of the DH system. Much of the technical assistance activities of the World Bank's and other donors' energy related activities have also been supported by the Swedish Government.

The EBRD launched in 2012 a EUR 35 million Moldovan Residential Energy Efficiency Financing Facility ("MoREEFF") aimed at financing residential energy efficiency improvements. Recognizing that the existing legal framework does not yet provide sufficient incentives and guarantees to investors for development and implementation of EE projects in the residential sector, the EBRD has also continued its technical assistance program to support the improvement of the legal and framework to enable and accelerate the lending for residential sector EE improvements, including support for drafting of a new Law on Condominium.

Started in March 2014, the National Energy Efficiency Fund (EEF) has financed energy efficiency projects on a 80% grant basis in several public buildings. The buildings owned by the Chisinau municipality have not, however, benefitted from the support of the EEF so far. The UNDP ESCO project is currently co-operating with the Energy Efficiency Fund in piloting the ESCO financing modality in Moldova to finance EE investments primarily in public, but also in residential buildings. The sectoral studies undertaken to inform the development of the ESCO market has revealed significant issues in working in the residential sector,

however, due to the weakness and lack of creditworthiness of the homeowners associations (HOA) as fundable entities to secure EE and retrofit projects.

The European Investment Bank (EIB), in co-operation with the EBRD, is currently preparing a framework loan of up to 60 million euros to support sustainable building energy efficiency improvements in Chisinau. The Government of Moldova is seeking to complement this loan with grant resources from the Green Climate Fund (GCF). The project is embedded into a long-term investment program aiming at addressing the refurbishment of both public and residential buildings. The first component of the pilot phase currently under development will focus exclusively on public buildings, while the second component (subject to the outcome of the feasibility study), will target both public and residential buildings. The total costs of the pilot phase are expected to be in the range 75 million Euros, consisting of an EIB loan (c.a. EUR 60 million), EBRD loan (c.a. EUR 10 million) and potentially an ESP grant (c.a. EUR 5 million). The project is to be implemented by the municipality of Chisinau with support of a Project Implementation/Management Unit. The next, so called “roll-out phase” is not defined yet, but it is expected that the GCL could play an important role in helping to roll-out the programme, either on a fee for service basis providing energy audits, feasibility studies and other services or as an ESCO signing energy performance contracts (EPCs) and providing a complete technical and financial solution.

Lesson Learned

Despite several attempts to start to effectively address the EE improvement and retrofit needs of the residential multi-apartment building stock in Chisinau and other Moldovan cities, the results so far have remained modest. For a big part this is due to the problems related to the current management of the residential building stock in general, since the Home Owner Associations especially in the older buildings inherited from the Soviet time (while also being the primary targets for the EE improvements) do not yet function as they should and, therefore, are not considered as creditworthy clients for financing. Another reason relates to the affordability questions. The Household Survey Data (2013) indicated that 80% of Moldova’s population may be in “Energy Poverty”, meaning they spend more than 10% of their budgets on energy bills. On average, energy expenditure is 17% of the total, which is high compared to other countries in the region. This also means that the required upfront EE investments with the current financing options in the market are unaffordable for many households. Therefore, new and innovative approaches are required to tackle with these issues to complement the more traditional lending programs.

Table 1: Challenges of improving energy efficiency in the residential sector (Source: UNECE Country Profiles on Housing and Land Management, Moldova, 2015)

Type: Existing multi-apartment housing stock		
Description	Challenges and opportunities	Consequences for EE projects
Accounts for 23 % of the total building stock 90% is in urban areas	<ul style="list-style-type: none"> Needs capital repairs (e.g.: insulation of roofs, walls and floors; replacement of apartments’ windows, entrance door and common windows; 	<ul style="list-style-type: none"> High costs for repair cannot be borne by most homeowners No decisions are taken

	<p>More than 90% of apartments were privatized in early 1990'</p>	<p>replacement of heating network; etc.)</p> <p>Decisions need to be taken by much of homeowners</p> <p>Municipal agencies still have the monopoly on managing the common properties</p> <p>In many cases the homeowners' association is not established or registered as a legal person</p> <p>The condominium property, including the land, is not registered under the name of the association</p>	<p>Low quality of management and lack of participation of homeowners in decision-making</p> <p>Homeowners cannot enter a contract agreement as an association, but they should sign individually</p> <p>The homeowners' association cannot obtain a loan from the bank</p>
<p>For improving the management of the housing stock and beside supporting the adoption of the new Law on Condominiums, the UNECE study suggested several things for the consideration of the Government and local public authorities such as: An awareness-raising and capacity-building strategy for homeowners, on the management of common properties; training for condominium managers; a school curriculum at different educational levels that incorporates discussion on the concept of common property and homeowners' responsibilities; promoting good practices of effective homeowners' associations by LPAs; and the privatization of municipal enterprises.</p>			
<p>GEF Resources Tentatively Allocated for Support (and as a % of overall total project cost)</p>	<p>\$275,000 (13.75%)</p>		
<p>Use of GEF Resources Described</p>	<p>Technical assistance: \$25,000</p> <p>Investment: \$250,000</p> <p>The project budget will be spent for the implementation of cost-optimal measures in energy-efficiency of residential buildings. This will be applied to most typical building in Chisinau, ensuring a high replicability character of activity. The pilot will lay ground for the most optimal technical and financial scenario, which will be used by similar projects in the field. The overall budget of the project includes costs related to local and international consultants, organization of participatory events and investments (procurement of equipment and works) In addition to this there will be programme of capacity building with residents to support the HOA.</p>		
<p>Co-Financing Amount</p>	<p>\$ 2,000,000, provided by Municipality of Chisinau</p>		
<p>Use of Co-Financing Described</p>	<p>The co-financing will be used by the municipality of Chisinau to start the retrofitting of the residential sector buildings. As a part of the first pilot phase of the project 19 buildings have been selected. The main financial resources will be used to replace the existing engineering infrastructure, insulations of the building, replacement of doors, windows, etc.</p>		
<p>Results – Estimated Payback period</p>	<p>12-15 years</p>		
<p>Sustainability of the Demonstration (Payback period with and without GEF grant)</p>	<p>With the project intervention and complimentary grant resources payback period will be reduced up to 9-11 Years.</p>		

<p>Brief Description of Demo Project</p>	<p>Technical assistance will be provided by GCL with involvement of external expertise and will includes: elaboration of the feasibility studies, technical documentation, energy audit and organization of public events. The possible Investments could be complimentary thermal insulation of the building envelope, change of the substation and automatic thermal control. The GCL will provide the platform to catalyse community action and the establishment of a functioning HOA where this does not exist or lacks skills and capacity to build a cohort of fundable buildings and owners, paving the way for the accelerated roll out of proposed investments in EE in the residential sector.</p>
<p>Incremental Value Added and Global Environmental Benefits</p>	<p>The Moldova Sustainable Green Cities Project (MSGCP) is targeting the residential sector as a part of a wider integrated urban planning approach (IUPA) at a neighborhood level. It seeks to strengthen the role of the Home Owner Associations (HOAs) to professionally manage the buildings and their common property and to contribute to the development of their surroundings, while also becoming fundable legal entities that can secure debt financing for the required investments. This shall pave the way for the acceleration of future projects with the possibility of the use of the available financing instruments and modalities in Moldova, including the emerging ESCO market supported under the other UNDP/GEF project.</p> <p>The activities of the MSGCP and the GCL in the area of building energy efficiency seek to facilitate and build the capacity of condominiums, Home Owner Associations (HoAs), public and private building management companies and public sector energy managers to:</p> <ul style="list-style-type: none"> • monitor the energy consumption of the building(s) under their supervision, including the introduction of electronic Energy Management Information Systems (EMIS); • assess and prioritize specific EE measures and building retrofits needs, related investment and savings potential and structure and negotiate financing for the projects; • prepare proposals for required maintenance and EE retrofit investments for the consideration of the meeting of the building management bodies and facilitate joint decision making among the building residents; • explore, support the development and piloting of new innovative business and financing models for implementing and financing the required investments; and • procure, negotiate and supervise the implementation of the required complementary expert and other services, including the actual retrofit works. <p>Effective co-ordination, co-operation, information and knowledge sharing throughout the project implementation between the various ongoing initiatives is obviously of primary importance and will be actively promoted as a part of the overall partnership building and stakeholder engagement strategy of the GCL.</p> <p>By supporting the activities listed above and by leveraging and structuring financing for the actual investments, the pilot/demonstration projects in the building sector are seeking to facilitate the implementation of at least 5 EE retrofit or integrated EE/RE projects in selected multiapartment and public buildings as a part of a broader neighborhood renewal project, as applicable. The total investments needs for completing a EE retrofit project for a typical multiapartment building in Chisinau (including thermal insulation of the building envelope, change of the substation and automatic weather control) has been</p>

	<p>estimated at about 200–250 thousands USD in total with resulting GHG reduction of about 2-3 ktons of CO₂eq over the lifetime of the investment. The average retrofit costs for different type of public buildings and the resulting GHG reduction is within the same range. With the GEF grant contribution of about 10-15%, this would correspond to the GHG reduction costs of about USD 10 per ton of CO₂eq reduced and thus be aligned with the cost-efficiency criteria suggested in the PIF and agreed upon at the work program entry. The remaining financing for each particular retrofit project is to be leveraged and structured by the GCL as a core part of their project development role by relying on a mix of complementary grant, concessional loans and equity funding and by exploring and taking full advantage of the emerging new funding opportunities. As examples, the new loans that are currently being negotiated between the Government of Moldova and the international financing entities, the ESCO approach promoted under the UNDP/GEF Moldova ESCO project and the “ambitious EUR 25 million program for retrofitting public and residential buildings in the area of Chisinau municipality” listed in the co-financing letter of the Chisinau municipality can be mentioned.</p>
Indicators to be used to evaluate the success or failure of the demonstration projects	<p>GHG reductions, Number of households taken out of fuel poverty.</p>
Demonstration Project #5	Innovative Green Waste Management Solutions
Project Name	Urban Waste to Biomass Energy
Type	Investment
Location	The project will be implemented on the location which will be selected by the General Housing and Planning Directorate of the Chisinau Municipality to streamline the non- domestic waste from the city with support of the Ecological Fund
Objective of Demonstration	Reducing fossil fuel consumption in Chisinau by replacing with fuel from non-residential waste –biomass from urban area of the city.
Baseline Initiatives	<p>Within the area of Chisinau city, waste management is the responsibility of the General Housing Department of the Chisinau Mayoralty, the functions being executed through the municipal company “Regia Autosalubritate”, a municipal solid waste management company owned 100% by the City of Chisinau. The Company is responsible for collection, transportation and disposal of household waste as well as for operation of landfills.</p> <p>The other municipal waste such as biomass from green zones, street waste, construction waste, etc. is not managed in a centralized way. As an example, the Municipal Enterprise "Green Areas Management Association" is facing with problems of depositing the waste from green zones cleaning, most of which now is transported and dumped to the municipal landfills.</p> <p>The EBRD has recently funded a Solid Waste Management Feasibility Study for the Municipality of Chisinau. The study identified investment priorities for the municipality in the field of waste management as follows:</p> <ul style="list-style-type: none"> • closing the Cecani landfill (2 mln Euros) • building a leachate filtration station in Tintareni landfill (2 mln Euros) • modernization of the Tintereni landfill (about 4,5 mln Euros) • extending the transport park for collection and transportation of waste (the investment depends on the number of cars) • rehabilitation of the access road (500,000 Euros)

	<ul style="list-style-type: none"> • rehabilitation of the transshipment terminal (station) (1,5 mln Euros) • expanding the gas collection system (about 500,000 Euros) • construction of waste separation and sorting facilities (1,5 mln Euros) <p>In the frame of the Chisinau Solid Waste Project, the EBRD is considering extending a senior loan of up to EUR 10 million to Regia AutoSalubritate. The loan will be guaranteed by the City and is expected to be co-financed by a capital grant of up to EUR 5 million from an international donor. The proceeds of the loan and the grant is expected to finance priority investments in Chisinau solid waste disposal system: (i) upgrade of the City's landfill site to EU compliance; (ii) rehabilitation of an alternative access road to the landfill; (iii) closure of a temporary dumpsite in Chisinau; (iv) refurbishment of the existing transfer station and investment into a waste sorting plant; and (v) building of a waste digestion plant for energy and heat production.</p>
Lesson Learned	Similar to other subsectors, there is a greater need to coordinate activities between the different waste sector initiatives to avoid duplication and take advantage of shared services and provide opportunities for coordinated investments. The strategies developed will also require behavior change, if they are to be successful in their implementation.
GEF Resources Tentatively Allocated for Support (and as a % of overall total project cost)	\$ 250.000,00 (45,5%)
Use of GEF Resources Described	<p>Technical assistance: \$30,000 Investment: \$220,000</p> <p>The overall budget of the project includes costs related to local and international consultants, surveys, organization of participatory events and investments (procurement of services and equipment)</p>
Co-Financing Amount	\$300,000 provided by Municipality of Chisinau from Environmental Fund of MoE
Use of Co-Financing Described	The co-financing will be used to design and to build the platform/facility for collection of the city garden waste and other kind of urban waste not managed by AutoSalubritate. The platform must be fully equipped and ensured with access to main infrastructures (electricity, water, sewerage, road...). Biomass fuel production unit will be installed at the facility.
Results – Estimated Payback period	4-5 years (based on the current expenditure of the Municipality on fuel for poorer households not connected to the DH network).
Sustainability of the Demonstration (Payback period with and without GEF grant)	Payback based on investment and current winter fuel payments for commercially purchased coal, on the capacity of the facility to produce biomass briquettes and operation costs is about 3 years
Brief Description of Demo Project	<p>TA will include design of plant and equipment, distribution and low carbon delivery systems. Survey of households benefitting from solid fuel support and advice on the criteria for the replacement of boilers and cooking equipment. Detailed business case and technical feasibility.</p> <p>Creation of the production facility (briquettes from urban biomass) will be part of investments. Those products must be distributed to 3,664 of poor and vulnerable families which are currently using coal and wood heating and being supported by the special fund established by the Chisinau Municipal Council. In the heating season 2014-2015, the Fund resources stand for about \$4 million</p>

	USD, from which approximately USD 0,51 million were used to subsidize these families to buy coal for heating.
Incremental Value Added and Global Environmental Benefits	<p>This project will reduce the incidence of fuel poverty in areas not served by the DH network and natural gas supplies and reduce the cost to the Municipality in subsidizing the cost of coal and winter fuel payments to the poorest households. Beside supporting the required behavior change programs to support the implementation of resource efficient waste management strategies and related waste management hierarchy (reduce, reuse, recycle, waste to energy, disposal), there are possible synergies and co-operation opportunities also for the required investments addressing, for instance, the treatment of the “green waste” i.e. the biomass generated by harvesting and cleaning the green areas of the city. Rather than just dumping this “green waste” into the landfill, it could be used as “waste to energy” for producing, for instance, wood briquettes to be distributed to those poor and vulnerable families, which are currently using coal and wood heating and are financially supported by the Municipal Fund. In this context, the initial approach taken in the PIF to focus on “energy from waste” was expanded by a new innovative entry point and suggestions generated by a participatory workshop with the municipal enterprises during the project preparation, where the challenge of dealing with green waste from public spaces was aligned to the tackling of fuel poverty, saving money from the Municipal social assistance budget.</p> <p>Based on the initial estimates, the production capacity of the wood briquette plant would need to be about 3,000-4,000 tons per year to replace about 1,600 tons of coal, thereby contributing to CO₂ reduction of 4,300 tons per year or 86 ktons of CO₂eq over 20 years.</p> <p>In the frame of the activities described above, the MSGCP and the GCL can contribute to the implementation of resource efficient waste management strategies by facilitating public participation in the planning process and the people behavior change initiatives for waste minimization and the sorting of waste, while also supporting and leveraging financing for the actual investments such as the mentioned “Green Waste Initiative”. Supported by the Ecological Fund, the management of non-domestic waste is planned to be streamlined and will be rationalized to one site, thereby also providing opportunities for co-locating the mentioned briquette production with other non-residential waste transfer site.</p>
Indicators to be used to evaluate the success or failure of the demonstration projects	<ul style="list-style-type: none"> • Quantity of the biomass replaced from landfill/ used for briquettes production and converted into energy • The CO₂ reduced by replacing the burning of coal with wood briquettes • Reduced CH₄ emissions from the landfill • Area of green spaces improved by additional investments

Annex H: Summary of the Draft Green City Lab (GCL) Business Plan

Annex H provides a brief summary of the Green City Lab (GCL) business plan. The full draft Business Plan is available upon request. Please note that at the start of the project the draft Business Plan, will be reviewed, strengthened, and improved as one of the first activities of the project. At the start of the project, the Project Manager will undertake a tender to select a company/consultant to strengthen and improve the draft business plan. The Green CityLab (GCL) is intended to become the leading knowledge management and networking platform, clearing house, an inter-mediator of finance and a source of innovations and expertise to catalyze sustainable low carbon green city development in Moldova with a mission to transform Chisinau and other urban centers in Moldova into modern green and smart European cities with improved quality of life for their citizens, while also demonstrating opportunities for sustainable economic growth.

While it will be initiated as the Project Implementation Unit of the GEF funded, UNDP implemented Moldova Sustainable Green Cities Project (MSGCP), the GCL is expected to gradually grow over time into a self-sustaining legal entity in the form of a public or semi-public institution operating at the national and local level and with an ability and capacity to leverage financing for and continue its operation also after the project. The GCL shall seek to sustain its operations not only through donor money but also through seeking clients and securing new contracts. Annual revenues of at least \$200,000 USD per annum are targeted by the end of the project for the GCL.

Initially GCL staff will have service contracts with UNDP for an agreed period of time. However, this will change as soon as it becomes a legally operating entity and is operating on a more commercial basis. Once operating on a more commercial basis, the GCL will primarily operate under a fee for services business model but in future it may also operate as a broker, as an investor or even to invest equity in specific projects or in start-ups operating in the area of green urban development in Moldova. In order to generate adequate revenue streams and surplus to sustain its operations, the GCL will develop bankable projects and secure necessary funding and support for their implementation by offering a variety of services to both the public and private sectors such as initial project design and brokering of financing for them, procurement of experts and contractors and providing expertise and other support for participatory planning and behavior change. Close co-operation with the private sector (including Home Owner Associations), academia, research and development institutions and public administration, including Chisinau municipality, relevant ministries such as the Ministry of Environment, the Ministry of Economy, the Ministry of Regional Development and Construction and the entities hosted by them, the State Chancellery and other related projects and initiatives such as the UNDP Social Innovation Hub project and the E-Government Center is sought from the very beginning. By co-creation of exemplar neighborhoods, the multiple benefits of an integrated and participatory urban planning approach by broad community engagement will be demonstrated and piloted.

The targeted timeframe for the GCL to start its operations as a separate legal entity will be within the first two to three years of the MSGCP implementation, allowing the GCL to use this time for creating the required partnerships, further clarifying the most feasible institutional form and demonstrating its value added to its envisaged future clients. By the time of the mid-term review of the project, it is envisaged that the GCL shall be operating as a self-sustaining entity. After starting as a separate entity, the project management arrangements for the remaining project implementation period will be adjusted accordingly.

Recognizing the close links with the ongoing UNDP MiLab project, working under the auspices of the E-Governance Centre and the State Chancellery, the GCL will, at least during the initial phase, work alongside these bodies with an opportunity for shared services and co-location. Whereas the MiLab Project is primarily based around social innovation, the convergence with the work of the GCL is clear in dealing with the environmental and economic life of cities including green urban development.

By the end of the project, the GCL seeks to secure its position as a sustainable, national resource that will support the development of green cities across Moldova based on a learning by doing approach and be the interface between local communities, government, funders, local and international expertise and global networks. Revenues need to exceed costs so that the GCL can continue to operate,, function, and grow. As a public institution with a Board constituted of the partner ministries and agencies as well as representation from the NGO community and client municipalities, the GCL would be able to operate as a not-for-profit entity whilst also benefitting from Government sponsorship and support together with an ability to re-invest any surplus in undertaking its future work.

In the short term (years 1-2), the expected outputs of the GCL will be equal to those of the MSGCP work plan, while also preparing ground for becoming a self-standing legal entity from year three onwards. Over the medium term (years 3-5 of MSGCP implementation), the GCL is expected to start its operations as a self-standing public or semi-public Institution, which can generate adequate surplus to sustain its operations by eventual further sponsorships and a variety of fee generating services, as outlined in further detail below. The project targets annual revenues of at least \$200,000 USD per annum (or more) by the end of the project and for a sustainable and profitable institution.

In the long term (period after MSGCP implementation), the GCL will: i) provide on-going support to Moldovan municipalities with a focus on building their skills, capacity and knowledge; ii) monitor, review and report on their progress, iii) further develop trading activities and income streams not directly dependent on government funding; and iv) continue to champion the integrated urban planning approach, while also promoting and benefitting from more effective use of modern ICT solutions and open data and knowledge management approach.

Foreseen longer term clients and services of the GCL

The key clients of the GCL will be the municipalities in Moldova, the communities and neighborhoods served by them, the city administrations (including their subordinated institutions and enterprises), urban residents (through homeowner associations) and private companies. While starting in Chisinau, the target would be to initiate the GCL operations in at least one other municipality within the life of the MSGCP and to expand the service model over time to provide more services than just consultancy on a fee for service basis.

In order to be sustainable after year 5, the GCL must have revenues and make a profit. Therefore, it is essential that the GCL must be embedded in the project delivery of the municipalities and have the possibility to earn fees for developing green urban development projects and, in addition, build relationships with the widest range of other potential partners and clients by various business models and services. The GCL cannot simply rely on donor funding to sustain its operations over the longer term.

The options for this are discussed in further detail below:

Service agreements and contracts: To serve the municipalities, the GCL could provide services in a number of areas. These might include the provision of expertise not possible to secure through direct employment, on call advice to support project development or implementation and specialist services that are time limited, such as the public engagement phases of the development of plans or strategies. These services can be extended to project management and implementation, if required and mandated by the municipality. The well-developed marketing and communications function of the GCL could also be offered to partner agencies such as the EEA and MoT to promote national behavior change programs. The EBRD, on the other hand, has indicated a desire to work with the GCL for developing Green City Action Plans by using the skills and expertise of GCL for community development and participatory planning as well as for identification and development of bankable projects.

Consultancy: To avoid distorting the market, the GCL is not foreseen to offer traditional consultancy or engineering services (at least for the duration of the MSGCP), but to act as a facilitator and enabler, supporting municipalities to develop, commission and implement green urban projects. Such “non-traditional” consultant services may include, for instance, initial project development and financial structuring by sharing the initial project development risks or providing procurement services for the engagement of private sector consultants and hardware suppliers, when and as needed. In the case that for some reason no private sector services can be procured, the GCL could also expand into the consultancy market, however, although this is not an immediate objective.

Project Financing Broker: A core service of the GCL will be as a project finance broker working for a number of organizations. Working for municipalities, the GCL could make bids in exchange for a management (or success) fee using its own skills and expertise to develop bankable projects backed up by robust feasibility studies and drawing on private sector skills as required. Additionally, the GCL could act as an intermediary working on behalf of funders and donors matching projects to their priorities and through the skills and experience held assist in the soft measures such as participatory planning and behavior change, ensuring that projects are relevant and adopted by communities.

Investment Partner: Within the limits of the capital the GCL has access to, it may act as an investment partner on behalf of municipalities as a part of a PPP. The GCL may also consider to take equity stakes in projects. Although this is not initially to be the core activity of the GCL, a public institution model would allow the GCL to profit from a PPP. A significant opportunity exists at a local level for the GCL to also enable and profit from increases in land value based on regeneration activities in partnership with the municipality and the private sector. To achieve this, the GCL would provide skills and expertise and be given the mandate to deliver new housing or other uses on land owned by the public sector with the profits gained from the increase in land value being recycled into further projects, building refurbishment and infrastructure. This is commonly termed as a Local Asset Backed Vehicle. This is explored further in the Innovation Hub report developed in the project preparation phase.

Energy Service Company (ESCO): While initially, there is no intention for the GCL to act as an ESCO since this may distort the emerging market being supported by the UNDP GEF ESCO Moldova Project, over the longer term this is not an issue as this project will finish by 2019. There is no constraint therefore to stop the GCL acting as an ESCO if the business model can be proven to work and be effective. Over the shorter term the GCL can and should focus on energy audits for buildings and developing feasibility studies for possible investments. Over the longer term the GCL may consider also to act as an ESCO using the EPC model. The benefits of this approach is

that it helps to mobilize capital into investments into energy-efficiency in buildings that would not otherwise occur using a blended model of owners money, grants, loans and loan guarantees. The GCL could also provide support to ESCOs on a fee for service basis or it could over time become an ESCO itself, signing EPCs with municipalities. This needs to be determined at a later stage.

Donor Funding: The GCL could benefit from seeking donor funding from other donors following the initial GEF investment to support the associated non-profit making activities such as knowledge management, training, enabling participatory planning and community engagement. Funding could be sought by the GCL from other donor active in Moldova to support other projects. These valuable activities may be supported by specific projects, although the long-term establishment of behavior change programmes, although desirable may be difficult to fund from capital schemes and may require revenue funding directly. The GCL could participate in transnational projects to support these measures, however, and could directly seek the support of the donor community, which may find that the role of the GCL is close to their own objectives. However, over the longer-term the GCL must aim to not rely 100% on donor financing and must seek additional clients. This is only the case during the initial period of the project.

Corporate Sponsorship: In a similar way to the sponsorship of the MiLab Project by Moldcell, the GCL could benefit from corporate support and sponsorship. This model is common practice in other international CityLab models where IT and tech companies support the innovation activities with a view to bring ideas to market through the innovation cycle. Potential sponsors include several ICT and other companies offering technical solutions for green and smart city development.

Detailed activities and services for the duration of the MSGCP

As mentioned already before, for the first two years of MSGCP implementation, the expected outputs of the GCL will be equal to those of the MSGCP work plan, while also preparing ground for becoming a self-standing legal entity which should start by year 3. While the detailed activities to reach the expected outputs will be subject to adaptive management throughout the project implementation, a non-exclusive list of some critical steps is presented below to complement the draft project work plan presented in Annex A of the project document.

Years of Green City Lab Activity	Year 1				Yr2	Yr3	Yr4	Yr5
GEF Project Implementation Period	Year 1				Yr2	Yr3	Yr4	Yr5
	Q1	Q2	Q3	Q4				
GCL Establishment								
Preparatory Activities								
Establishment of PIU	█							
Development of the appropriate form of public or semi-public institution.			█	█				
Development of the required legal documentation, terms of reference, mandate, statutes and government/local council decision report to establish the GCL as a self standing legal entity					█			
Legal registration and establishment of the premises						█		
Recruitment of the project manager / GCL executive director	█					█		
Staff recruitment	█					█		
Staff training		█	█	█	█	█	█	█
Developing an ICT platform and contacts for setting up an on-line network/ roster of local and international green city experts and expert institutions		█	█	█	█			
Core Operations								
Development of GCL Annual Work Plan		█			█	█	█	█
Marketing and awareness campaign and events programme		█			█	█	█	█
GCL Launch Event (Moldova EcoEnergetica)		█						
Annual Anniversary Event					█	█	█	█
Behavior change programme launch (e.g. Transport) (could be rolled out nationally subject to funding)				█	█			
Behavior change programme (e.g. EE, self-management, waste and recycling etc. (could be rolled out nationally)					█	█	█	█
Establish formal links with EEA, EEF, EIB, EBRD, public transport operators, utilities etc.		█	█	█	█	█	█	█
Creation of the Green Urban Task Force and Steering Group		█	█					
Green Urban Task Force and Steering Group Meetings (quarterly)		█	█	█	█	█	█	█
Chisinau Development Phase								

either at a local or national level. In order to be able to offer services and generate a surplus through trading activities, the GCL at that stage cannot serve anymore as the PIU for the MSGCP, although it may continue as a service provider to support its implementation otherwise. Similarly, while the former staff of the PIU (including the project manager) may be selected by the GCL Board to continue their work within the GCL, the role of the GCL Executive Director and the MSGCP project manager need to be separated at that stage. In other words, if after the establishment of the GCL as a self-standing legal entity, the project manager will be selected for the position of the GCL Executive Director, a new project manager needs to be selected for the MSGCP.

Beside the project manager / GCL executive director and his/her assistant, the core team of the GCL is envisaged to consist of the task managers for each of the three substance areas, on which the work of the GCL will initially focus, namely: i) Integrated and participatory urban land use and mobility planning and low carbon transport; ii) public and residential building energy efficiency and renewable energy use; and iii) resource efficient waste management, complemented by a marketing and communications specialist and a funding and procurement expert (with accountancy skills). Core skills required across the team will include project management qualifications and experience. The required ICT support may be obtained through the established partnership arrangements with the e-Government Center or UNDP supported MiLab, but this is still to be confirmed at the outset of project operations.

To guide and manage the GCL activities for the first two years, the PIU will set up and incubate the office environment, establishing systems and procedures and reporting mechanisms. It is envisaged that some of the staff will permanently become part of the implementation of projects at a local level, providing skills, expertise and experience amongst a team recruited from the cohort of those who have work placements and secondments and therefore aware of the business of the GCL.

The full-time dedicated staff will be complemented by secondments from various ministries and municipalities, the university and possibly NGO and civil society groups according to project requirements and specific initiatives. To address concerns over conflicts of interest the secondments of public servants may be restricted to the incubation phase of the project.

Where gaps in knowledge and expertise exist, this will be addressed through short-term contracts with national and international expert

Facilities, Buildings and Equipment

The GCL, as an outward facing organization, needs to have a ‘shopfront’ that is publicly accessible with the opportunity for exhibitions and displays. Ideally the GCL will have a small, dedicated, events space (that can be a co-creation space), designed to be flexible where events, hackathons, talks and demonstrations can be held. This space should ideally be convertible into shared workspace for informal organizational forms to inhabit and act as an incubator for micro-businesses. Facilities for basic catering should be provided with at least a fresh water supply, sink and drinks making facilities and a backup for event catering provided externally. There needs to be enough room for 7-10 desk spaces, with the facility for these to be screened off from the events space as required. The spatial requirement is anticipated to be in the order of minimum 100 -150 m2.

These facilities could be shared with partner organizations, benefitting from economies of scale and shared equipment such as IT infrastructure, printers and copiers and staff welfare. The proposed MoEnv hub might form the basis for a collaborative space on the ground floor in a central location, ensuring access for all. Other options include the green refurbishment of an existing office building or industrial facility, perhaps donated from the public estate as an in-kind contribution and rental payments used to recover costs in partnership with other bodies such as the EEA and EEF. A further option lies in the establishment of the GCL in a central location, perhaps in an empty retail unit with office space above. Currently there are empty shop units below the Municipal Council building that may be suitable. Other options include clustering around the innovation and IT activities of the TUM. There are possible co-location opportunities with MiLab and the E-Governance Centre, based in a building managed by the State Chancellery.

Funding needs and sources

The initial estimates of the GCL operating costs by taking into account its envisaged staffing needs (as outlined above) and other costs amount to approximately USD 150,000 per year, which after the end of the GEF support would need to be matched by the annual revenues with a goal of at least USD 200 000 per year to ensure that GCL is profitable. The biggest cost item are the staff salaries with the share of close to 75%, while the rental costs of premises, public outreach and events as well as required international expert support would account for the rest. While the GCL partner institutions and founders are expected to cover at least a part of the fixed GCL operating costs, the rest would need to be mobilized from year 3 onwards by GCL’s fee generating services. Some options for this are discussed in further detail in the table below.

Source	In Kind	Direct
Municipal Council(s)	Premises, seconded staff, tax breaks, equipment, venues for events, office costs (heating, water and electricity supply and IT)	Cash from Service Level Agreements (SLA) (energy management, PIU, statutory planning consultations etc.)

Central Government	Premises, seconded staff, tax breaks, equipment, venues for events, expertise, knowledge management and research. Support to embed the GCL as a national resource for the public good (could be based on contributions from various ministries.	
Consultancy Services		Advice, contracts and SLA's to municipalities, businesses and HOA's.
Business Services		Business advice and incubation to SME's involved in sustainability based on enhanced rental charges for shared workspace (see secondhome.io) or providing business advisory and mentorship to start-ups.
Equity Investments		The GCL may consider to make equity investments into start up companies in Moldova operating in the spacee
Project Management*		PIU services to municipalities and business for GUD projects – management fee.
Procurement Services		Pre-approved frameworks and panels, EU procurement compliant processes, services to banks, funders and municipalities – management fee.
Sponsorship	Premises, events, IT infrastructure, mobile, marketing and communications, telecoms and data, vehicles, accountancy, legal advice, insurance, expertise.	Cash contributions in exchange for profile and branding, including Challenge Fund support, awards and prizes.
Donors and other funding entities		Packaging of funding bids including feasibility studies.
Grant programs		International project funding to support staff time and behavior change programmes, support for innovation activities.
Crowdsourcing		Crowdsourcing campaigns

Overall the GCL must be generating revenues over and above the initial project funding so that by the end of the project the revenues exceed the costs and the GCL is sustainable and can grow. This means that at the start of the project the Business Plan prepared during the PPG phase will need to be updated and significantly strengthened and services and business lines of the GCL further defined. By the end of the project funding, the GCL should have secured a variety of service level agreements and contracts, be a project funding broker and provide other services to a variety of sectors. While the GCL will start by providing consultancy services, project development services and brokering of demonstration project services, over time it could also become an investor in sustainable energy start ups, an investor in sustainable energy services and it could also consider to operate as an ESCO. In short, the GCL will as part of the business plan consider different business models. Depending on the market and other framework conditions, the GCL may have the ability to also become an investment partner meaning that it will invest along side co-financers in specific projects. The ESCO business model is perhaps the best way that the GCL might become a co-financing partner. List of potential services to be provided by GCL is presented in the table below which represents an initial assessment of income:

Estimated incomes per year			
Services	Number of units	Cost (euro)	Income (euro)
1. Services for public sector			
Design of feasibility studies	4	15000	60000
Preparation of public procurement packages	4	2000	8000
Design of project proposals (per attracted investments)	3	20000	60000
Project implementation fees (per project, according to monthly fees)	4	24000	96000
Total for public sector			224000
2. Services for private sector			
Project/business idea generation	5	1000	5000
Elaboration of business plan,	2	10000	20000

Energy audit	2	10,000	20,000
Project implementation fees (per project, according to monthly fees)	1	20000	20000
Total for private sector			65000
Total per year			289000

The initial estimated cash flow of the GCL activities for the first 3 years of activity with project support and 10 years with self-financing with co-financing of the GCL owner is presented below:

	First 3 years									
	YR1 Q1	YR1 Q2	YR 1 Q3	YR Q4	YR2 Q1	YR2 Q2	YR2 Q3	YR2 Q4	YR3 Q1	YR3 Q2
Opening Balance	515 920,00	492 554,00	465 438,00	412 312,00	362 936,00	336 810,00	290 934,00	241 308,00	195 432,00	169 306,00
INCOME										
Public Sector Contribution (Owner)	9 859,00	9 859,00	9 859,00	9 859,00	59,00	9 859,00	59,00	859,00	59,00	59,00
Services to Local Authorities					3 500,00	3 500,00	3 500,00	3 500,00	3 500,00	3 500,00
Contracts private sector										
SUBTOTAL	9 859,00	9 859,00	859,00	9 859,00	13 359,00					
EXPENDITURE										
Office Utilities	-350,00	-350,00	-350,00	-350,00	-350,00	-350,00	-350,00	-350,00	-350,00	-350,00
Office Rental	-4 125,00	-4 125,00	-4 125,00	-4 125,00	-4 125,00	-4 125,00	-4 125,00	-4 125,00	-4 125,00	-4 125,00
Office Expenses	-350,00	-350,00	-350,00	-350,00	-350,00	-350,00	-350,00	-350,00	-350,00	-350,00
Staff Costs	-8 400,00	-8 400,00	-30 660,00	-30 660,00	-30 660,00	-30 660,00	-30 660,00	-30 660,00	-30 660,00	-30 660,00
Events + Promotion		-20 000,00	-20 000,00	-20 000,00		-20 000,00	-20 000,00	-20 000,00		-20 000,00
International Consultants		-3 750,00	-7 500,00	-3 750,00		-3 750,00	-7 500,00	-3 750,00		-3 750,00
Office Equipment subcontracted experts	-20 000,00				-4 000,00				-4 000,00	
SUBTOTAL	-33 225,00	-36 975,00	-62 985,00	-59 235,00	-39 485,00	-59 235,00	-62 985,00	-59 235,00	-39 485,00	-59 235,00
CLOSING BALANCE	492 554,00	465 438,00	412 312,00	362 936,00	336 810,00	290 934,00	241 308,00	195 432,00	169 306,00	123 432,00
cumulative cashflow										
10 years										
	4	5	6	7	8	9	10	11	12	13
Opening Balance	37 928,00									
INCOME										
Public Sector Contribution (Owner)	39 436,00	17 900,00	17 900,00	17 900,00	17 900,00	17 900,00	18 795,00	19 734,75	20 721,40	21 708,00
Services to Local Authorities	112 000,00	156 800,00	164 640,00	172 872,00	181 515,60	190 591,38	199 591,38	200 120,95	210 127,00	220 127,00
Contracts private sector	10 000,00	22 500,00	31 500,00	45 000,00	47 250,00	49 612,50	52 093,13	54 697,75	57 402,40	60 207,00
SUBTOTAL	161 436,00	197 200,00	214 040,00	235 772,00	246 665,60	258 998,88	271 948,82	285 546,10	299 356,15	313 762,00
EXPENDITURE										
Office Utilities	-1 400,00	-1 400,00	-1 400,00	-1 442,00	-1 485,26	-1 529,82	-1 575,71	-1 622,60	-1 670,49	-1 718,38
Office Rental	-16 500,00	-16 500,00	-16 500,00	-16 995,00	-17 504,85	-18 030,00	-18 570,90	-19 117,80	-19 669,70	-20 227,60
Office Expenses	-1 400,00	-1 400,00	-1 400,00	-1 442,00	-1 485,26	-1 529,82	-1 575,71	-1 622,60	-1 670,49	-1 718,38
Staff Costs	-122 640,00	-122 640,00	-122 640,00	-126 319,20	-130 108,78	-134 012,04	-138 032,40	-142 173,66	-146 437,92	-150 818,18
Events + Promotion	-60 000,00	-60 000,00	-60 000,00	-61 800,00	-63 654,00	-65 563,62	-67 530,53	-69 556,44	-71 637,35	-73 774,26
International Consultants	-15 000,00	-15 000,00	-15 000,00	-15 450,00	-15 913,50	-16 390,91	-16 882,63	-17 384,75	-17 892,50	-18 406,26
Office Equipment subcontracted experts	-4 000,00	-4 000,00	-4 000,00	-4 120,00	-4 243,60	-4 370,91	-4 502,04	-4 637,92	-4 778,92	-4 925,92
SUBTOTAL	-240 000,00	-240 000,00	-240 000,00	-247 200,00	-254 612,60	-262 246,15	-270 088,63	-278 147,35	-286 427,66	-294 929,40

SUBTOTAL	-196 940,00	-196 940,00	-196 940,00	-202 848,20	-208 933,65	-215 201,66	-221 657,71	-228 307,4
CLOSING BALANCE	2 424,00	260,00	17 100,00	32 923,80	37 731,95	43 797,22	50 291,12	57 238,8
cumulative cashflow		2 684,00	19 784,00	52 707,80	90 439,75	134 236,98	184 528,10	241 766,
Capital cost (owner contribution for 3 years of project implementation for GCL creation)							EUR -157.144	
Investment cost (3 years project contribution for of GCL creation)							EUR -515.920	
indicators	discount rate	value						
NPV	9,92%	€ 194 792,08						
IRR F		-7%						
IRR C		13%						
Payback period of capital		year 7						
Payback period of investment		more than 10 years						

The financial IRR is negative which means that it is not possible to establish the GCL without any grant support. This confirms the necessity of the project to support the GCL creation for first 2 - 3 years of activity as a project PIU before setting it up on a more commercial basis. Once co-financing is also considered, then the IRR of the capital is positive and higher than used discount rate, it means that the estimated co-financing provided by the project partners for the creation of the GCL is enough to create a feasible and cost-efficient infrastructure to enable the GCL to have revenues and be self-sustainable by the end of the project. The initial payback period of invested capital is 7 years, payback period of investment (including grant) is more than 10 years that is not attractive for private and for profit activity, that is why non-for-profit business model is more appropriate for the GCL. The GCL will operate like a non-for profit company and it is envisaged by the end of the company that it will have annual revenues of \$200,000 USD per year or more.

The overarching exit strategy for the MSGCP is to treat the GCL as a business from day one, using private sector approaches to income generation, staff utilization, business development and robust management. Each staff member will be expected to develop the business and be involved in the evolution of the GCL into a commercial organization, initially through seeking of new clients and new business and through seeking fees through the design, elaboration, and implementation of the demonstration projects. Staff hired under the PIU will realize that once the GCL is operating they will need a contract with the GCL to replace their UNDP service contracts once GCL is in operation. Using a combination of public sector values and private sector acumen the GCL will approach contracts in a fair and open way, being clear about fee structures and the destination of any surplus to support the mandate.

By hiring an international company (or consultant) which is experience in the establishment of non for profit companies, it is proposed to train key staff members in core business skills whilst empowering all staff to take responsibility for their own projects, client relationships and further business development. Like with any business, all staff will need to understand that they also have responsibilities for new business development.

The built in Marketing and Communications function will not only promote the activities of the GCL around green urban development, targeted at citizens, businesses and stakeholders. It will also be engaged in promoting the GCL as an organization to potential clients and funders.

Governance

While initially reporting to UNDP and the MSGCP Board, the GCL Board will be the main governing body of the GCL after its establishment as a self-standing legal entity. This may or may not be the same as the MSGCP Board, which will be decided in due time by the main GCL sponsors.

In order to ensure participatory planning and cooperation with all stakeholders of green urban development, a Green Urban Task Force will be created either at the national or local level (or both depending on the final GCL institutional set-up), including a representative selection of the key stakeholders from the public administration and the civil society and expected to work alongside the GCL team. The chair of the Task Force will be a member of the Project Board. Specific 'theme' groups in the areas of mobility, buildings, green infrastructure, housing and the green economy could be extended to deliver projects on the ground while also acting as facilitators for

third sector organizations, NGO's and pressure groups to engage with the work of the GCL. The mechanism currently exists in Balti, where it was developed under the EU 'STATUS' project that aimed to embed the principles of integrated urban planning in small to medium sized cities. The Urban Task Force was created to develop and implement the 'Urban Agenda', a living programme and document that works alongside the General Urban Plan to develop, promote and gain funding for innovative integrated solutions to the priority problems of the city. The principles of grass roots planning, and collaborative working are at the heart of the multi-disciplinary Urban Task force and this concept is suggested to be applied also to the work of the GCL. Learning could be gained from the experience of Balti and representative from Balti could join the Project Board or Steering Group as appropriate, in anticipation of the next roll-out. The Green Urban Task Force represents the technical and operational expertise outside the GCL that will be required to ensure that the community, ministries and the Municipality, owns projects.

Trends and Opportunities

Presently there are a large number of CityLab type projects and initiatives being developed in the EU and elsewhere, referenced in the main 'Innovation Hub' report. Some of these have already been developed as part of a network of cities through transnational projects whilst others are part of the wider 'Smart City' networks that are developing, The opportunity for the GCL lies in the forging of international partnerships. Existing partnerships exist between Chisinau and Grenoble, France, Kingston-upon-Hull in the UK, Mannheim in Germany and Sacramento in the USA that could be a platform for further shared innovation and experience. In particular connections should be made between TUM and EU universities that are involved in the development and monitoring of CityLabs or Smart Cities, such as in Vienna.

Alongside this the establishment of innovation hubs in both Chisinau and a number of cities around the world is an opportunity for further networking and the clustering effect of an innovation community will add value to activities of the GCL as demonstrated through precedent. Opportunities should be taken to cluster the activities of the GCL with the emerging innovation hubs and centers focused on IT for example, to secure economies of scale, joint and collaborative working and building a critical mass to support the creative economy and the retention of skills and knowledge in Moldova.

The Global Platform for Sustainable Cities (GPSC) backed by the World Bank and Global Environment Facility (GEF), aims to boost investment, data sharing, and greener planning practices in key developing cities around the world. Additionally the newly launched Coalition for Urban Transitions aims make the economic case for green city development.

SWOT Analysis

STRENGTHS

- UNDP support in early years through the Green Sustainable Cities Project
- Good levels of buy-in from ministries and municipalities, the donor community and stakeholders
- Existing innovation and e-governance infrastructure and IT cluster in place
- Offers of co-financing
- Based on best international practice

OPPORTUNITIES

- Links with existing UNDP projects such as Biodiversity Project
- International / transnational projects, partnerships and academic links
- Private sector sponsorship
- Networks within Moldova
- National knowledge management platform

WEAKNESSES

- Recruitment and retention of skilled staff
- Low payment capacity of the GCL clients
- Current low levels of interest and engagement of the inhabitants to be involved in local planning process

THREATS

- Political changes / instability at a local and national level
- Difficult funding environment due to financial and banking crisis
- Tensions between ministries in terms of ownership and control

Options considered for hosting the GC - Option 1: A National Level State Sponsored Public Institution

This option sees the GCL hosted by a state ministry (or its sub-agency). In this institutional model the initial funding would come from the UNDP GEF Green Cities Project with complementary core funding provided by national government, supplemented by contributions from beneficiary municipalities and later through trading activities. The GCF would remain as a national resource in the long-term

providing skills, expertise, support and access to funding and establish further project implementation units and support delivery vehicles and mechanisms, as appropriate, based on innovation and participatory planning across Moldova.

In terms of governance the GCL could be steered by the partners through a GCL board identified with adequate reporting mechanisms in place to ensure that the core articles are adhered to, to ensure buy-in and prevent duplication. A Government decision would be required to establish such an institution.

Advantages

- Simple institutional form that is already tested
- Long term sustainability is more certain with core funding provided by the government
- International financing resources could be easier to attract
- A national resource available to all municipalities in Moldova

Disadvantages

- New legislation may prevent the establishment of this type of organization
- Limited ability to trade and provide services to NGO's and business
- Potential disconnect between plans and project development and the ultimate implementation of projects (urban development is the legal responsibility of municipalities and not of the national authorities)
- Problems with political division between ministries and mandate
- Potentially vulnerable to political change
- Disconnect with local communities
- EBRD have an expectation that municipalities have their own PIU, this form would not provide this directly

For the host ministry, the following options were considered:

MoE – Currently hosting the EEA and EEF having a focus on energy efficiency and renewable energy, while also being under the control of the Deputy Prime Minister possibly leading to high level exposure and government support for the GCL. Energy related activities represent only a proportion of the green cities concept including wider environmental and planning considerations. Therefore, the MoE may not be the best choice to host the GCL in the light of its expertise and mandate, but a strong partner.

MoEnv – The MoEnv covers a wider range of areas that specifically relate to green urban development and the work of the GCL, although not really covering the specific subsectors dealing with energy and transport to the extent that the other line ministries.

MoRDC - Responsible for the RDA's there are links to the implementation of the projects developed by the GCL, however the mandate of the MoRDC is not solely focused on green urban development.

State Chancellery - Independent from other ministries with co-ordinating role and mandate, the State Chancellery was considered as a potential host. With recent experience of hosting the e-Government Centre and MiLab by the State Chancellery, the synergies with these initiatives would be clear.

A possibility may also exist for the creation of a 'joint center' by several Government entities, each having a possibility to steer the GCL operations while also contributing to its running costs and other resource requirements under the overall co-ordination of the State Chancellery or the Office of the Prime Minister.

To bridge the gaps between a nationally based organization and the implementation of projects on the ground, the GCL established as a national entity may need create, in agreement with the municipality concerned, an appropriate vehicle to deliver green urban development projects at the local level. These might include:

- Stand-alone project implementation units;
- Public institutions;
- Local Asset Backed Vehicle; and
- Sub-contracted service level agreements with RDA's.

Option 2 – A Public Institution Sponsored by the Municipality

This option sees the GCL to be hosted directly by the municipalities concerned. The pros and cons of this option are briefly summarized below:

Advantages

- A close relationship to the host municipality
- Local capacity building opportunities
- Closer connections to local communities and neighborhoods

Disadvantages

- Vulnerable to political change
- Potential disconnect between central government ministries and local government

- Easier to devolve responsibilities for planning, regeneration and implementation
- Single structure to develop and implement projects
- Possible issues with conflicts of interest arising from the commissioning body also being the implementation vehicle

Common for both options when considering the future sustainability of the GCL is that the selected institutional modality must allow the GCL to i) sign and conclude contracts for different type of fee generating services and with a variety of stakeholders, including the private sector, ii) maintain and reinvest any surplus for its future activities; iii) pay attractive salaries; and iv) not be directly affected by day to day politics and related changes (for instance after the elections) as it concerns the actual existence of the GCL, its staffing and its overall business development opportunities.

Recommendations

While the draft business plan together with the MSGCP project document can be used to guide the establishment of the GCL, it is equally important to maintain adequate flexibility to adapt to changing circumstances. The GCL core mission and values should be adopted and maintained from day one, however, to ensure that the GCL is owned and cherished by stakeholders and remains at the center of participatory green urban development in Moldova.

Both options outlined above have pros and cons and will have to be weighed against resources and capacity at a national and local level. Whatever mechanism is chosen, the connection between the GCL and the places and communities it will work with must remain close and the appropriate delivery mechanisms be secured to ensure the delivery of projects post development and funding.

The long-term success of the GCL will be dependent upon the image and value it portrays as much as in the local, national and international partnerships that it will develop. Therefore, the GCL must remain agile if it is to negotiate within the fast-changing context of Moldova. To achieve this, the final organizational structure must remain as flat as possible, perhaps eliminating the need for a hierarchical manager and moving towards a collective and cooperative model, in the spirit of many contemporary innovation based organizations. Adopted by many organizations in both the public and private sectors, the concept of agile working seeks to maximize the talents within the organization and focuses on results above processes and hierarchy. An agile organization can respond to technological, political and financial change and take advantage of new opportunities. It is neither top down nor bottom up, but outside in.

Annex I: UNDP Social and Environmental Screening Template (SESP)

Please refer to the attachments

Annex J: UNDP Project Quality Assurance Report

Please refer to the attachments

Annex K: Gender Analysis

1) CONTEXT AND LEGISLATIVE BACKGROUND ON GENDER EQUALITY IN MOLDOVA

Guiding questions: What is the legal status of women in the country of intervention? Are there national policies, plans or commitments on gender equality and women's empowerment? How are women and men regarded and treated by customary and formal legal codes and the judiciary system (this includes an assessment of state issued documentation such as identification cards, voter registration, and property titles, the right to land, inheritance, employment, atonement of wrongs, and legal representation)? What are the gender norms and values? What are commonly held beliefs, perceptions and stereotypes relating to gender? Are there differences between women and men in the local context in terms of rights, resources, participation, and gender-related mores and customs? Identify and analyze any additional issues related to the context of specific areas of work and types of interventions, outcomes and impacts related to the proposed project.

Women and men have equal legal status in the Republic of Moldova, as provided by the national legal framework. The legislation of the Republic of Moldova provides for equal rights for women and men in all areas of public and private life. The Constitution of the Republic of Moldova provides equal rights for all citizens before the law and public authorities without any differences by race, nationality and sex. (art.16 (2)).

The Law on ensuring equal opportunities for women and men Nr. 5-XVI as of 09.02.2006 has an important role in promotion of gender equality in Moldova, which stipulates that in the Republic of Moldova, women and men benefit of equal rights, freedoms, and opportunities. For the first time the law defines gender-based discrimination, making distinction between direct and indirect discrimination. The law defines the term of gender-based discrimination as any distinction, exception, restriction or preference aiming at or resulting in restriction or impairing of recognition, performance and implementation based on equality of human rights and fundamental freedoms between women and men. Article 5 of the Law „Prohibition of discrimination on grounds of sex” provides that "Actions that restrict or exclude equal treatment of women and men in any way are considered discriminatory and shall be prohibited. The legal document containing gender-based discriminatory provisions shall be declared invalid by competent bodies."

At the same time, Law no.5-XVI provides for a range of actions that are not regarded as discriminatory, such as: measures to ensure certain special conditions for women during pregnancy, post-partum, and breast-feeding period and affirmative actions. The same Law no. 5-XVI established the institutional mechanism designed to coordinate the implementation of the legal framework, i.e. the Government Committee for Equality between women and men, Division for Gender Equality and Violence Prevention Policies in the Ministry of Labor, Social Protection and Family, Gender Focal Points (GFP) in line ministries. At the same time, experts in the field of gender equality and civil society organizations expressed reservations regarding its efficiency, in particular regarding the activity of the GFPs, which are overloaded with their basic functions and have limited time for gender equality issues.

Based on the Concluding Comments of the Committee on the Elimination of Discrimination against Women, the Government of Moldova adopted the National Programme on Ensuring Gender Equality for 2010-2015 (NPEGE), which contributed to mainstreaming the gender equality principles in policy documents in all areas and at all levels of decision making and implementation. A new draft Programme on Gender Equality was developed for years 2016 - 2020.

The Law No. 71 of 14.04.2016 to modify and complete some legal acts contributed to improving the legislation related to gender equality (combatting sexism in advertising, setting of a 40% quota for both sexes on electoral lists etc.), however a mechanism for its implementation should be created.

The legal-normative framework also guarantees equal access of women and men to social assistance, healthcare, education, employment, participation in the public and political life. The legal-regulatory framework does not have any discriminatory provisions towards women; women are equal with men before law, without any discrimination and they enjoy equal rights and freedoms in economic, social, political, civil and cultural life. The national legal framework meets the international standards related to gender equality, but there are still some gaps in terms of law

implementation, strengthening the legal mechanism of women's protection against discrimination. The Committee on the Elimination of Discrimination against Women expressed its concern about the insufficient implementation of laws aimed at the elimination of discrimination against women. It called upon the Republic of Moldova to ensure effective implementation and enforcement of existing legislation, with a view to reducing structural disadvantages that hampered the effective realization of substantive gender equality.²⁸

The Assistant Secretary-General for Human Rights raised his concern about the many deep divisions in the Republic of Moldova, including along ethnic, religious, gender, political, linguistic and income lines, and urged support for the implementation of the decisions of the Moldovan National Human Rights Institution, the Council for Preventing and Combating of Discrimination and Ensuring Equality, as well as for the strengthening of the independence of the Ombuds institution²⁹.

Concerning customary and formal legal codes and the judiciary system, formally women and men are treated equal: insurance by identification cards, voter registration, property titles, the right to land, inheritance, employment, atonement of wrongs, and legal representation. At the same time, there are many discrepancies between "de facto" and "de jure" in many spheres, including employment, access to services, decision-making at household level as well as access of women to elected posts, including high posts in the state.

Women have higher levels of education than men, though they are involved less in income-generating activities. Women have higher shares in such sectors as services compared to industry. Men are considered heads of the household more often than women: out of the total of households surveyed by the National Bureau of Statistics, 41.3% were led by women and 58.7% by men.³⁰ At national level, 36% of the agricultural farms were led by women and 65% by men.³¹ Out of the total of formally registered agricultural enterprises, 14% are led by women and 64% - by men.

As regards commonly held beliefs, perceptions and stereotypes relating to gender and differences between women and men in the local context in terms of rights, resources, participation, and gender-related mores and customs, there is a mixed picture. Research and surveys revealed that women have the responsibility for the household chores: 79% of a survey respondents³² mentioned that women have the responsibility to take care of the house and 82% mentioned that men have the role of breadwinners.

In Moldova, when a person of a certain sex takes on a role perceived for the other sex, this is considered as a serious violation of values and moral rules. Although it is claimed that many men undertake childcare responsibilities, official statistics reveal that 96,35% of those who used the childcare leave in 2014 have been women. The rigid distribution of the gender roles is supported to a great extent by the Orthodox Church. According to surveys, perceptions and stereotypes related to traditional roles of women and men have remained unchanged. These stereotypes contribute to laying of a double burden on women for household and childcare responsibilities and limit their access to the decision-making processes at all levels. The stereotypes and patriarchal views promoted inclusively by the Church are also serious limitations hindering access of women to important positions in the state, however the number of women in local councils increased as a result of the past local election polls.

In the context of the Green Cities project, it should be mentioned that the UNDP Office in Moldova supported the process of gender mainstreaming into various strategic documents such as the new Land Code, The Draft National Disaster Risk Management Strategy, several General Urbanistic Plans, District spatial plans, Strategies on Local Development. The lessons learnt and experiences have an important value for the Green Cities Project in identifying a strategic approach for integrating a gender perspective in the urbanistic plans under the project.

The draft of new Strategy on Equality between Women and Men for 2017-2020 includes a special chapter on Gender

²⁸ <http://www.refworld.org/topic,50ffbce51b1,50ffbce5208,57fb9e304,0,,,html>

²⁹ <http://www.refworld.org/topic,50ffbce51b1,50ffbce5208,57fb9e304,0,,,html>

³⁰ <http://www.statistica.md/libview.php?l=ro&id=5106&idc=168>

³¹

http://www.statistica.md/public/files/Recensamint/Recensamint_agricol/Femei_barbati_agr/Femei_barbati_agric_rom.pdf

³² http://www.progen.md/files/7562_raport_indexul_egalitatii_gen_2015final.pdf

and Climate Change with focus on Energy, Transport, Health and Agriculture sectors. Respectively, the Green Cities Project activities can contribute to the implementation of the National Gender Equality Strategy and improving the situation of women in Moldova.

Taking into consideration the recommendations of the Committee on the Elimination of Discrimination against Women³³ a focus of the Green Cities Project could be on enhancing the economic and political empowerment of women in rural areas.

In the context of the proposed project, the energy and transport industries – both public and private – is one of the last remaining truly male domains. The higher up in the hierarchy of a company, the smaller the share of women. This is largely due to the fact that jobs in this field are often accessed through technical training courses, in which women are still underrepresented. The various trades relevant for the energy sector, such as building, electrical, gas and water installation, are also male dominated. This lack of representation means that women have fewer opportunities to contribute to the planning, conceptualization and political dynamics within this extremely powerful economic sector, and their attitudes, preferences and solutions continue to be marginalized.

2) DIVISION OF LABOUR AND ACCESS TO EMPLOYMENT OF WOMEN AND MEN IN MOLDOVA

Guiding questions: What is the division of labor among women and men? What is the participation of women and men in the formal and informal economy? Who makes decisions and manages household time and resources? Who takes responsibility for the care of children and the elderly? Are there certain tasks that only women or men are expected to perform? Are there shifts in the household division of labor? Are these shifts shared equitably? Discuss the gendered division of labor relevant to the project's interventions including how the gendered division of labor and patterns of decision-making effect the project, and vice versa how the project could affect the gendered division of labor and decision-making. Include an assessment of the gender differences surrounding various needs, availability and allotment of time examining the implications that gender differences have on commitments and in turn the effects on poverty and work-life balance. What is the gendered division of productive and reproductive work; how do women and men spend their time throughout the day, week, month, and/or year, and during the seasons? Identify and analyze any additional issues related to who does what in the specific areas of work and types of intervention related to the project.

The Legislation of the Republic of Moldova provides for legal measures to combat discrimination, including the right to seek legal protection. Particularly, the unjustified refusal to hire a person, illegal dismissal and other violations of employees' rights can be claimed under Articles 329 – 332 of the Labor Code.

The gendered division of labor continues to be reflected in job choices and the reality that women continue to take the bulk of the responsibility for care work, yet it also has an impact on other matters, such as the amount of energy used and what it is used for. More often than not, male members of the household are still responsible for technical energy matters (such as decisions about heating and warm water supply, as well as repairs), while energy savings linked to behavioral change lie within the responsibility of female members of the household. It is safe to say that this division is not viewed neutrally within society. Indeed, sociocultural norms and behavioral patterns play a role within in the household, but they are also taken into account by product developers for marketing purposes, or perhaps more subtly, in the information produced about efficient energy use.

Generally access to employment, good housing, shops, green space and essential services such as health care and education has an impact on health, wellbeing and life chances. The most recent European research shows that, compared to men, women are more likely to be materially deprived. An aging population increases the risks of poverty and, as women continue to outlive men, older women face more difficulties. In Moldova life expectancy for women is 75.4 years and 67.5 for men.

On the other hand, an increasing proportion of women are in formal waged employment. 72% of the total of employed women had the status of employee, while for men the same indicator was 62%. Among non-employees, men dominate in the category of self-employed (60,3%), while women are family non-paid workers (72,3%). These findings were also revealed under a statistical survey on Time Use in the Republic of Moldova, carried out by the National Bureau of Statistics within the Joint UN Project on Strengthening the National Statistical System in Moldova.

³³ It recommended that the Republic of Moldova: take immediate steps to implement effective measures to eliminate discrimination against women in rural areas in all areas covered by the Convention, including through the use of temporary special measures; step up efforts to enhance the economic and political empowerment of women in rural areas; include in its next periodic report information and gender disaggregated data on the access of women in rural areas to land, credit, social and health services and the formal labor market; and integrate a gender perspective into the new Land Code.

According to the study, women do most of the unpaid work which annual value is equal to that of a Gross Domestic Product. Women spend twice as much time for household work, participate more often in volunteering activities and have less time for leisure. According to the same source, twice as much mothers than fathers are daily involved in childcare activities. While six out of ten mothers spend two hours per day to wash, feed and dress their children, only two out of ten fathers do similar activities for an hour a day.

Gender differences are highlighted in responsibilities for caring. According to a study Report on the informal economy in Moldova conducted in 2016 by Expert Group and ILO, in 2013 the share of informal employment as a part of total employment was 34.7 per cent for men compared to 27.1 per cent for women. This is mainly due to the higher share of informality in sectors traditionally employing more men: agriculture and construction. In formal employment, the rate of employment among women was lower (37.4%) compared with men (42.1%).

The time use Survey revealed that eight out of ten women and nine out of ten men are travelling daily for certain purposes spending 1.4 hours. Moldovan women spend two thirds of their daily travel walking and fifteen minutes of this time they travel by public transport. Men spend three times more time for travels by car than women, while women and town residents more often use taxi services. Differences exist in travel patterns of women and men, as well as in access to services. Gender sensitive planning and urban design can help to reduce the impacts of differences in life chances and caring responsibilities through making provision for attractive and fully serviced neighborhoods, connected to employment, services and urban centers with safe, efficient and fast movement systems. Providing of safety, housing, integration of a gender dimension in participation and decision-making are some key areas for action in planning of green city actions. The extent to which women and men are prevented from moving around freely through fear of harassment or violence is unknown in the Moldova context. While geographically situated in Europe and striving towards European integration, Moldova has a lot to learn from European experiences. For example, many European cities have undertaken actions to make safer cities, the results of which benefit both genders. To date there have been some inspiring examples of innovative housing, neighborhoods, space time budgeting that support gender equality.

3) ACCESS TO RESOURCES, BARRIERS AND OPPORTUNITIES IN RELATION TO MOBILITY AND ACCESS TO SERVICES

Guiding questions: Who has access to and control over resources? Do women and men benefit equally from resources and are women and men likely to benefit equally from the resources, products or activities proposed by the project during its different phases? Identify who benefits from opportunities, for example in regards to land, livestock, financial services, health and education, employment, information and communication. What are the barriers and opportunities in relation to mobility, as well as in access to services? Part of this is understanding the risks and barriers that women and men, and girls and boys take when entering public or private sector spaces and accessing services. What are the barriers they face in accessing quality services that are accountable, transparent and responsive to their needs and interests? Identify and analyze any additional issues related to meaningful access, participation and control in the specific areas of proposed project work/types of interventions.

Labor Force Participation Rate in Moldova increased to 45.70 percent in the second quarter of 2016 from 40.10 percent in the first quarter of 2016. Labor Force Participation Rate in Moldova averaged 46.93 percent from 2000 until 2016, reaching an all-time high of 61.40 percent in the second quarter of 2000 and a record low of 37 percent in the first quarter of 2012.

The profile of women in employment and business is the following: three out of 10 have higher and vocational or specialized education. Six out of 10 are employed in the public sector. Three out of 10 are highly skilled professionals and 4 out of 10 are low-skilled and skilled workers. Half of the employed women with higher education are concentrated in the central region and in the capital, Chisinau. Three out of 10 employed women are young (between 15-34 years) and 6 out of 10 are of working age (between 35-64 years). Women occupy only 1 out of 4 leadership positions in companies. Only a third of self-employed workers have a university degree, a professional or specialized/expert education.³⁴³⁵

Women's labor force participation rate was 37.6% (vs. 44.2 for men) in 2014³⁶ still lower than that of men and women are significantly more likely than men to be unemployed (particularly when younger), to face difficulty obtaining a

³⁴ <http://www.indexmundi.com/facts/moldova/indicator/SL.TLF.ACTI.FE.ZS>

³⁵ <http://www.md.undp.org/content/moldova/en/home/presscenter/pressreleases/2016/07/29/10-profiluri-statistice-ale-femeilor-i-fetelor-din-republica-moldova-pe-n-elesul-tutoror-.html>

³⁶ http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/MDA.pdf, page 6

loan, to be under-represented in corporate and public decision-making positions and face greater discrimination in economic and social life because of their gender. A Joint Information and Services Bureau (JISB) has been in operation with support of UN Women, providing better quality services and improved access to information for women and men in Moldova.

Green city development and gender differences and roles of women and men are important indeed, when developing public outreach and community engagement strategies and activities associated with them, as stated in the Green City prodoc. At the same time project activities will have an impact on rethinking or redesigning of some services and utilities. Although public or private services may at first appear to benefit everyone equally in a town or city, men and women may have different needs and priorities in terms of how a service should be designed and delivered, especially where these needs relate to their different economic activities and care responsibilities. Applying a gender perspective to services, including transport, water, solid waste and/or district heating, can positively benefit both the service providers and their customers who include women and men, as well as girls and boys, and society in general. In the context of the proposed project, the following aspects should be mentioned: Energy usage is related to income and ownership of property – the higher the income, the higher the energy usage – but it is also linked to the question of who can afford newer, more efficient energy technologies. Poorer members of the population, including a disproportionate number of women (especially single mothers and older women), are more likely to live in poor quality rental apartments and are thus unable to influence whether a building is energy efficient (if heat insulation is utilized, for example). At the same time, poorer groups have fewer opportunities to benefit from renewable energy installations through financial involvement.

Services (such as urban transport, national passenger transport, provision of water and management of solid waste and district heating and cooling systems) impact on men's and women's lives differently but often inadequate attention is paid to how such services could be designed and implemented to better meet the needs and priorities of both men and women. The relative importance of such services and how they are used often differs between men and women and a need exists for these to be taken into account early in the project design and during implementation of the project so as to enable both men and women to benefit equally and to encourage changes in behavior by those companies or authorities responsible for such services.

4) Decision-making

Guiding questions: Who participates in the decision-making in the household, the public sector and the private sector? Are the bargaining positions of women and men different? Are women involved in making economic decisions? What are the decision making structures related to the proposed project? Who is likely to participate in the proposed decision making structures at the different levels or phases of the project? What are women's and men's capacities to make decisions freely, and to exercise power over one's body, whether in one's household, community, municipality, and state. In what kinds of decisions do women in the household participate? Or which ones do they decide on their own (household management, schooling for children, family decision-making, family planning, etc.)? In what avenues or strategies do women engage to influence household decisions? What barriers do women and other vulnerable social groups face in meeting their practical needs and interests? Identify and analyze any additional issues related to decision-making in the specific areas of work and types of intervention related to the project.

According to gender profiles developed by UNDP under the UN Joint Programme "Strengthening the National Statistical System", in cooperation with the National Bureau of Statistics and with the support of the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) and the UN Economic Commission for Europe (UNECE, every second leader is a woman, and half of them are young and at a fertile age (15-44 years). 7 out of 10 women in a leadership position have a higher education diploma. At the same time, from 10 positions in public sector held by women, two are in leadership and 8 are in executive roles. Women occupy only 1 out of 5 public dignity functions (including 43% in the judicial sector, and 29% in the prosecution sector), a quarter of officials of the customs service or defense and national security (the military). Three out of 10 respondents consider that women cannot practice certain professions (due to so-called biological differences) and two consider that women are unable to hold management positions.

The profile of women in elected and appointed positions is the following: 6 out of 10 leaders from public administration, healthcare and education are women. Two out of 3 women hold leadership positions in the public service sector and 1 in 3 occupy senior positions. In 2014, women filled a quarter of the top five positions on electoral lists (parliamentary elections) and between 23%-35% of candidates in local elections are women (from mayor to local councilor / district / municipal). Only 1 in 10 women are MPs, executive officials and heads of public administration.

Women hold only every fourth position as a civil servant. One in three persons has a higher rate of confidence in women that hold a position in Government and Parliament. Each fourth respondent believes that women are not promoted to higher positions.³⁷

According to data of the National Bureau of Statistics, men hold higher shares of managing positions at all levels. Out of the total of heads at all levels, 57% are men and the rest 43% are women. The discrepancies are more obvious among heads of enterprises. Thus, the ratio between women and men among employers is 1 to 4 (26.9% women vs. 73.1% men), regardless of ownership form of the enterprise. Depending on size of the enterprise, women are more often heads of microenterprises (31.5%) and medium enterprises (24.7%), while the enterprises with over 100 employees are women-led in a proportion of 18%.

Men hold the majority of decision-making positions while women are under-represented in the decision-making process. The participation of women in decision-making at parliamentary level shows a representation of 18.8% (out of 101 parliament members 19 were women in 2014). By contrast, at the European level the same indicator is 35%, while at global level the average share is 22.5%.

In 2014, women led four ministries out of 16. However, only one key ministry was led by a woman. At local level 18.1% of posts of mayor, deputy-mayor, and chairperson or deputy chair of the raions were held by women.

Women are under-represented in the justice and security structures. The share of female judges in 2014 was 43/8%, while the share of women in the total number of police officers, including civil protection and border-guards constituted 17.1%³⁸.

The Committee on the Elimination of Discrimination against Women (2013) was concerned at the continued low representation of women in the Parliament and in government. It recommended that the Republic of Moldova increases its efforts to provide training and capacity-building for women to enable them to enter public office, and enhance awareness raising campaigns on the importance of the full and equal participation of women in political and public life.³⁹

The Special Rapporteur on extreme poverty and human rights urged the State to address and eliminate discrepancies in remuneration for women and men; encourage public and private employers to apply affirmative action (quota) policies for women in recruitment and create favorable conditions for women to take up positions traditionally occupied by men. The Special Rapporteur recommended that the Republic of Moldova ensure the provision of skills development initiatives for women and take measures to support self-employment opportunities, especially in rural areas where employment opportunities were limited.⁴⁰

The following can be mentioned in regards to:

- women's and men's capacities to make decisions freely, and to exercise power over one's body, whether in one's household, community, municipality, and state;
- what kinds of decisions do women in the household participate? Or which ones do they decide on their own (household management, schooling for children, family decision-making, family planning, etc.)?
- In what avenues or strategies do women engage to influence household decisions?
- What barriers do women and other vulnerable social groups face in meeting their practical needs and interests?

According to the Family Code, all married persons have equal rights and obligations in family relationships, regardless of gender, race, nationality, ethnic origin, language, religion, opinion, political affiliation, wealth and social origin. All questions in family life are settled by the spouses jointly, in accordance with the principle of equality in their family relationships. Each spouse has the right to continue or to independently choose his/her occupation and profession. Spouses establish their residence freely and independently. The relationships between spouses are based on mutual respect and help, on joint obligations of supporting the family and of taking care of and educating children.

³⁷ <http://www.md.undp.org/content/moldova/en/home/presscenter/pressreleases/2016/07/29/10-profiluri-statistice-ale-femeilor-i-fetelor-din-republica-moldova-pe-n-elesul-tutoror-.html>

³⁸ <http://www.statistica.md/libview.php?l=ro&id=5106&idc=168>

³⁹ <http://www.refworld.org/publisher,CEDAW,,MDA,52f385744,0.html>

⁴⁰ <http://www.refworld.org/topic,50ffbce51b1,50ffbce5208,57fb9e304,0,,.html>

At the same time, in the majority family the family decision-making depends of the person who is present. In the context of migration, very often women decide on their own (household management, schooling for children, family decision-making etc.). But high prevalence of domestic violence should be mentioned too. According to the study, during their lifetime, 7 out of 10 adult women (between 45-59 years), 6 out of 10 women with higher education women experienced at least one form of violence from their partner. 1 from 10 adult women (35-59 years) have suffered from all types of violence from their partners. More than half of women are victims of psychological abuse. Every second female victim suffered multiple cases of physical violence. One in five adult women (35-59 years) is a victim of sexual offence. From 10 women victims of violence from others than their partners, 5 were abused by their parents, and 3 by their siblings.⁴¹

Despite the fact that the legal framework stipulates equal opportunities for women and men use the parental leave, due to stereotypes, 96% of beneficiaries of parental leave are women. Also, the adoption of the paternal leave should be mentioned, but the first step – is organization of public awareness about the roles and responsibilities of women and men in the family and in society⁴².

The Committee on the Elimination of Discrimination against Women reiterated its concern about the persistence of patriarchal attitudes and deep-rooted stereotypes regarding the roles and responsibilities of women and men in the family and in society and the persistent stereotyping of older women and women with disabilities. The Committee was concerned that, although the Republic of Moldova was a secular State, religious institutions often perpetuated traditional gender roles in the family and in society and influenced State policies with an impact on human rights. It urged the State to ensure that local authorities promoted policies based on gender equality principles, without interference from religious institutions. It also urged the Republic of Moldova to develop a comprehensive strategy across all sectors, targeted at women and men, girls and boys, to overcome patriarchal and gender-based stereotypical attitudes.⁴³

The Special Rapporteur on extreme poverty and human rights urged the Government to ensure that all perpetrators of sexual assault and other forms of abuse are brought swiftly to justice. The Special Rapporteur on extreme poverty and human rights recommended that the Republic of Moldova ensure adequate legal and social protection for women and girls subjected to gender-based violence and trafficking⁴⁴.

The Committee on the Elimination of Discrimination against Women was concerned that, following divorce or the death of their husband, women were often denied their right of inheritance. It urged the full implementation of the provisions on inheritance and succession contained in the Civil Code and the closing of the gap between the law and practice, in line with the Committee's general recommendation No. 29 (2013) on the economic consequences of marriage, family relations and their dissolution⁴⁵. The Committee expressed concern at the different mandatory retirement ages for men and women. It recommended that the State raise the retirement age for women so that it was the same as that for men and expand pension schemes in order to ensure at least the minimum subsistence level for women and men.

5) CAPACITY NEEDS, SKILLS, KNOWLEDGE LEVEL AND THE VALUE ASSOCIATED WOMEN'S AND MEN'S KNOWLEDGE AND CAPACITY

Guiding questions: What are the training, education and literacy levels of women, men and other social groups in relation to the proposed project? Do women and men have equal access to education, technical knowledge and/or skill upgrading? Do men and women have different skills and capacities and face different constraints? What is the value associated with women's and men's respective knowledge and skills? Are women's or men's knowledge or skills in specific areas valued differently? Identify and analyze any additional issues related to knowledge and capacity in the specific areas of work and types of intervention related to the project.

⁴¹ <http://www.md.undp.org/content/moldova/en/home/presscenter/pressreleases/2016/07/29/10-profiluri-statistice-ale-femeilor-i-fetelor-din-republica-moldova-pe-n-elesul-tutoror-.html>

⁴² The Labor Code was amended with a new article - 124¹ "Paternal leave", which provides a 14 days paternal leave to allow fathers' assistance when the child is born (based on Law No.71 of 14 April 2016).

⁴³ <http://www.refworld.org/topic,50ffbce51b1,50ffbce5208,57fb9e304,0,,, .html>

⁴⁴ Ibidem

⁴⁵ <http://www.refworld.org/publisher,CEDAW,,MDA,52f385744,0.html>

In the energy, transport and other connected sector, too, gender roles influence patterns of consumption and can result in differing attitudes, preferences and approaches to risk-taking. Women, for example, have a comparatively high awareness of risk, which is reflected in their stronger rejection of risky technologies such as nuclear power. Moreover, they are less likely to rely on technical solutions to environmental problems and are subsequently more willing to make changes to environmentally unfriendly behaviors and life-styles. Men travel by car by three times more than women⁴⁶. Women also place greater emphasis on the responsibility and influence of individuals and accordingly, more women than men support the notion of an energy transition and are more committed to its implementation. In addition to differing attitudes, communication and access to information also play a key role. For example, women tend to prefer direct communication, such as information provided by friends or colleagues, whereas men are more likely to consult written sources of information. How we evaluate our own knowledge is also shaped heavily by persistent, deeply rooted gender differences. For example, while 33% of men feel very well informed about the energy transition, only 23% of women would be prepared to say the same thing. Surveys across the energy sector reveal strikingly similar results, with a high percentage of women answering “I don’t know”. Of course, this does not necessarily reflect the genuine knowledge of the subject matter, but rather how the individual assesses what they know or think they might know. This aspect is also closely linked to the political dimensions.

CONCLUDING REMARKS:

The results of the gender analysis are the foundation for taking gender into account in all steps of the Green Cities project cycle. The Green Cities Project is a significant project with large-scale implications and multi-faceted impacts, it is recommended the development of a Gender Integration Strategy and Action Plan to ensure a strategic approach in tackling gender issues during project implementation. The Gender Action Plan should be annually updated to consider new developments, changes, as well as progress achieved under the project. Indicative activities to be included in the future Green Cities Gender Strategy and Action Plan are outlined below:

- Encourage broad community engagement and participation, taking into consideration the social and gender perspective, this will be an essential complementary tool “Fast Track” challenge program(s) / In the Outcome 2
- On development of strategies, Operation Procedures, staffing schemes, allocation of resources and decision-making – refer to specific arrangements that both sexes should be represented equally. In case the impact on women is less visible or women face larger exclusion and harsher conditions, interventions and actions should be designed in such a way as to target the under-represented group in a special or as a priority group.
- To include representative of women organization in the Project Board.
- Promotion of full participation of women (and men) in design of policies and decision making related to integrated land use and mobility planning and the improvement of their socioeconomic conditions.
- Capacity development for women to be specialist technicians, construction workers & operators with focus on energy efficiency and the like.
- Use of women’s groups as knowledge transfer outreach and enhance access to services.
- Conduct analysis of training needs of women entrepreneurs.
- Conduct meaningful consultation with participation of both women and men to discuss the status of the project and decide on the next steps in the project.
- Team building Workshop on Gender and Green Cities (with participation of Project partners, etc.)
- Thematic workshops on Gender and Green Cities addressed to Central Public Authorities, LPA,

⁴⁶

Source:
http://www.statistica.md/public/files/publicatii_electronice/Utilizarea_timpului_RM/Note_analitice_rom/03_brosur_ROM.pdf

entrepreneurs, representatives of local communities, others partners

- Provide recommendations and entry points for strengthening the gender dimensions of Project's Communication Strategy.
- Engendering media/ public events.
- Annual Gender Audit.
- Create shared spaces for critical dialogue between social innovators and gender equality actors on problems and solutions.
- Consider allocating at least 10-15% of budget to gender related actions: i.e. involvement of females led households, attracting women based organizations, generating knowledge products on promotion of gender equality into the area of project activity

Also, the Gender Strategy and Action Plan should:

1. Respond to gender issues within the scope of project interventions;
2. Answer questions in regard to the baseline situation;
3. Integrate gender considerations into the project's theory of change;
4. Integrate gender considerations into the project's results framework;
5. Provide for an annual update of the Gender Action Plan to ensure that outputs and activities respond to the changes and progress made during project implementation.
6. Comply with UNDP's project quality assurance standards.
7. Support the project's Social and Environmental Screening procedure.

**Annex L: Standard Letter of Agreement Between UNDP And The Ministry of Environment Of The Republic Of Moldova
For The Provision Of Support Services**

Dear Mr. Munteanu

1. Reference is made to consultations between officials of the Government of Moldova (hereinafter referred to as “the Government”) and officials of UNDP with respect to the provision of support services by the UNDP country office for nationally managed “Moldova Sustainable Green Cities – Catalyzing investment in sustainable green cities in the Republic of Moldova using a holistic integrated urban planning approach” Project (ID: 00101330). UNDP and the Government hereby agree that the UNDP country office may provide such support services at the request of the Government through its institution designated in the relevant programme support document or project document, as described below.

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

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

- (a) Identification and/or recruitment of project and programme personnel;
- (b) Identification and facilitation of training activities;
- (c) Procurement of goods and services;

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

5. The relevant provisions of the Basic Assistance Agreement (BAA) between the Authorities of the Government of Moldova and the United Nations Development Programme (UNDP), signed by the Parties on 2 October 1992, including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The Government shall retain overall responsibility for the nationally managed programme or project through its designated institution. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the project document.

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

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

8. The UNDP country office shall submit progress reports on the support services provided and shall

report on the costs reimbursed in providing such services, as may be required.

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

10. If you are in agreement with the provisions set forth above, please sign and return to this office two signed copies of this letter. Upon your signature, this letter shall constitute an agreement between your Government and UNDP on the terms and conditions for the provision of support services by the UNDP country office for nationally managed programmes and projects.

Yours sincerely,

Signed on behalf of UNDP
Dafina Gercheva
UNDP Resident Representative

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For the Government
Valeriu Munteanu, Minister of Environment of the Republic of Moldova
[Date]

Attachment
DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

1. Reference is made to consultations between the Ministry of Environment (the Ministry), the institution designated by the Government of Moldova and officials of UNDP with respect to the provision of support services by the UNDP country office for the nationally executed project “Moldova Sustainable Green Cities – Catalyzing investment in sustainable green cities in the Republic of Moldova using a holistic integrated urban planning approach” (Project ID 00101330).
2. In accordance with the provisions of the signed letter of agreement and the project document, the UNDP country office shall provide support services for the Project as described below.
3. Support services to be provided:

Support services	Schedule for the provision of the support services	Amount and method of reimbursement of UNDP	Estimated Chargeable Amount
Payments, disbursement and other financial transactions, including direct payments, budget revisions, etc.	2017-2021	Cost-recovery for ISS based on UNDP Universal Price List	\$ 12,622.00
Recruitment of staff, project personnel and consultants, including creation of vendors, selection and recruitment of SC holders, personnel management services and banking administration, etc.	2017-2021	Cost-recovery for ISS based on UNDP Universal Price List	\$15,277.00
Procurement of services and goods, and disposal, including evaluation, proceeding through CAP, contracting, disposal of equipment and asset transfer, customs clearances, etc.	2017-2021	Cost-recovery for ISS based on UNDP Universal Price List	\$13,034.00
Travel support, including travel arrangements and authorization, ticket, visa and booking requests, F10 settlement, etc.	2017-2021	Cost-recovery for ISS based on UNDP Universal Price List	\$3,087.00
Organization of conferences, workshops and trainings	2017-2021	Cost-recovery for ISS based on UNDP Universal Price List	\$2,920.00
Communication support, including maintenance of undp.org accounts	2017-2021	Cost-recovery for ISS based on UNDP Universal Price List	\$3,060.00
Total			\$50,000.00

4. Description of functions and responsibilities of the parties involved:

UNDP will provide support services to the Ministry as described in the paragraph 3 above in accordance with UNDP rules and procedures; it retains ultimate accountability for the effective implementation of the project;

The UNDP will provide support to the National Project Director (appointed by the Ministry) in order to maximize the programme’s impact as well as the quality of its products. It will be responsible for administering resources in accordance with the specific objectives defined in the Project Document, and in keeping with the key principles of transparency, competitiveness, efficiency and economy. The financial management and accountability for the resources allocated, as well as other activities related to the execution of programme activities will be undertaken under the direct supervision of the UNDP Country Office.

The Ministry through its National Project Director (NPD) designated from its staff or through duly authorized person, will approve annual work plans, authorize direct payment requests and submit them to UNDP country office in a timely manner.

The Ministry through its NPD or other duly authorized person will monitor and assure that the project funds are spent in accordance with Annual Work Plan (AWP) by authorizing and signing direct payment requests and Combined Delivery Reports (CDRs).

Annex M: Letters of Financial Commitments – Cofinancing Letters (AITT, Ministry of Environment, City of Chisinau, UNDP)

[see separate attachment]

Annex N: Letters of Support (EBRD, Carbon Trust)

[see separate attachment]