



United Nations Development Programme

**Project Document for directly implemented projects
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UNDAF/Country Program Outcome 5: By 2019, legal and strategic frameworks enhanced and operationalized to ensure sustainable management of natural, cultural and energy resources.		
UNDP Strategic Plan Output: Output 1.4: Scaled up action on climate change adaptation and mitigation cross sectors which is funded and implemented		
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<p>Brief project description</p> <p>The objective of the project is to leverage investment for transformational shift towards low-carbon urban development in Bosnia and Herzegovina thereby promoting safer, cleaner, and healthier cities and reducing urban GHG emissions. To enable this transformational shift, the project will facilitate implementation of technically and economically feasible low-carbon solutions in key urban sectors, and promote their wider uptake by municipalities and private sector via a dedicated financial mechanism established within the national environmental finance framework. The project will also accelerate the implementation of a policy and regulatory framework supportive of low-carbon investment in cities.</p>		

FINANCING PLAN		
GEF Trust Fund		USD 2,370,000
UNDP TRAC resources		USD 0
Cash co-financing to be administered by UNDP		USD 0
(1) Total Budget administered by UNDP		USD 2,370,000
PARALLEL CO-FINANCING		
	UNDP	USD 3,458,571
	Government	USD 37,550,625
(2) Total co-financing		USD 41,009,196
(3) Grand-Total Project Financing (1)+(2)		USD 43,379,196
SIGNATURES		
Signature:	Agreed by UNDP	Date/Month/Year:
Signature:	Agreed by UNDP	Date/Month/Year:
Signature:	Agreed by UNDP	Date/Month/Year:

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List of Acronyms and Abbreviations

BiH	Bosnia and Herzegovina
BPPS	Bureau for Policy and Programme Support
CO	Country Office
CPAP	Country Programme Action Plan
CSO	Civil Society Organization
DEA	Detailed energy audits
DIM	Direct Implementation Modality
EF FBiH	Fund for environmental protection of FBiH
EF RS	Environmental Protection and Energy Efficiency Fund of Republic Srpska
EMIS	Energy Management Information System
ESCO	Energy Service Company
FBiH	Federation of Bosnia and Herzegovina
FIRR	Financial internal rate of return
FSP	Full Sized Project
GED	Green Economic Development
GEF	Global Environment Facility
GEFSec	Global Environment Facility Secretariat
GHG	Greenhouse Gases
LCUD	Low-Carbon Urban Development
MET FBiH	Ministry of Environment and Tourism of Federation of BiH
MOFTER	Ministry of Foreign Trade and Economic Relations of BiH
MRV	Measurement, Reporting and Verification
MSPCE RS	Ministry of Spatial Planning, Construction, and Ecology of Republic Srpska
M&E	Monitoring and Evaluation
NDC	Nationally Determined Contribution
NEEAP	National Energy Efficiency Action Plan
PAC	Project Appraisal Committee
PIF	Project Identification Form
PIR	GEF Project Implementation Report
PMC	Project Management Cost
POPP	Programme and Operations Policies and Procedures
PPG	Project Preparation Grant
PPP	Polluter Pays Principle
RS	Republic Srpska
SEAP	Sustainable Energy Action Plan
SME	Small and medium enterprise
STAP	GEF Scientific Technical Advisory Panel
TOR	Terms of Reference
UNDP	United Nations Development Programme
UNDP-GEF	UNDP Global Environmental Finance

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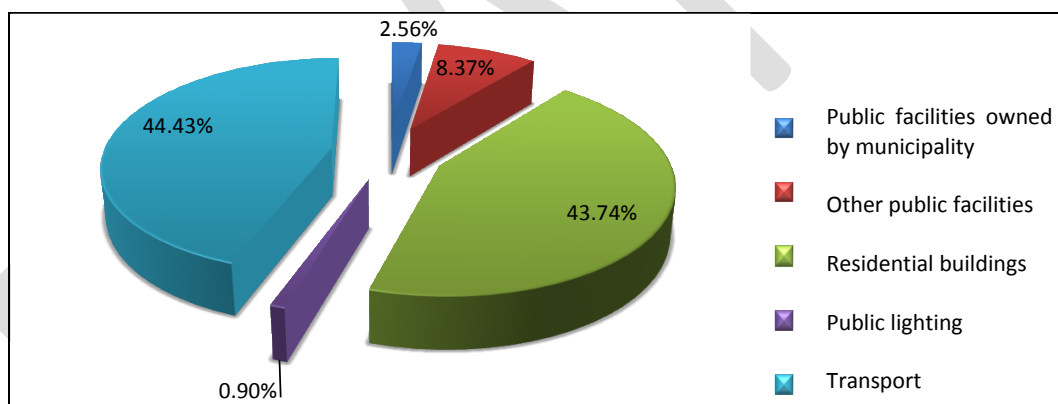
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I. DEVELOPMENT CHALLENGE

1. Bosnia and Herzegovina (BiH) is a highly-decentralized country comprising 145 local governments located in two entities, Republic of Srpska (RS) and Federation of Bosnia and Herzegovina (FBiH), and a separate administrative unit - Brčko District (BD) (See Administrative Map in Technical Annex I).
2. Due to a long period of neglect and under-investment during and after the Bosnian war, urban infrastructure in BiH, public and residential buildings, energy systems and utilities, waste management, and transport, are now in need of expansion and modernization. From a global environmental standpoint, this situation contributes to a steady increase in greenhouse gases (GHG) emissions, primarily associated with energy use in public facilities. (see also Technical Annex II for analysis of urban GHG emissions in BiH). Public facilities are also the largest energy users and GHG emission sources in municipalities in BiH, as illustrated, for example, in Figure 1 for the urban GHG inventory of the town of Travnik. Modernization, upgrade and expansion of municipal buildings, infrastructure and services in BiH will improve the quality of urban life, and achieve a range of important local and global environmental and sustainable development benefits.

Figure 1 Urban GHG emissions in the town of Travnik, BiH



Source: Sustainable Energy Action Plan of Travnik, BiH,
http://www.covenantofmayors.eu/about/signatories_en.html?city_id=2552&seap

Regarding environment protection and GHG emission reduction, the key challenge in BiH is the lack of institutional capacities to adopt and implement relevant strategic and legislative documents which, inter alia, regulates implementation of innovative concepts of environmental protection and climate change mitigation, including low-carbon urban development (LCUD).

3. Key to the strategic framework of environment protection and climate change mitigation, BiH has adopted the Strategy for Climate Change Adaptation and Low Emission Development Strategy for Bosnia and Herzegovina (in 2013) and the National Emission Reduction Plan for BiH¹. BiH ratified the United Nations Framework Convention on Climate Change in 2000 as a non-Annex I party. To date, BiH has submitted its Initial and Second National Communications,

¹ Ministry of Foreign Trade and Economic Relations, October 2013.

and the Third National Communication is in the final stage of preparation. Additionally, BiH signed the Paris Agreement and thereby developed its Nationally Determined Contribution (NDC),² which explicitly recognizes the potential of the public sector for GHG emission reduction and emphasizes that to “increase emission reduction amount and develop a sustainable system for public building renovation, international financial support is required”.

4. At the state level, BiH has signed the International Energy Charter (2016) and the Energy Community Treaty (2009), indicating the government’s recognition of the need to improve energy efficiency to ensure sustainable and low carbon development. The country has also developed its National Energy Efficiency Action Plan (NEEAP), consisting of the two entities’ NEEAPs; while the NEEAP for the Brcko District has been approved by FBiH and is expected to be adopted soon by RS. NEEAPs include an indicative energy savings target of 9% by 2018, where energy efficiency in public facilities and utilities is clearly a priority area and is expected to contribute the most to achievement of the national target with an annual reduction in energy consumption by 1,900 GWh. Congruent with the best international policy practices, the NEEAPs emphasize that the public sector must lead by example and act as a driver for low-carbon urban transformation.
5. Local authorities across BiH also recognize the importance of transition to low-carbon urban development, and are taking appropriate policy and regulatory actions. Several municipalities voluntarily signed the EU Covenant of Mayors initiative, and have developed and adopted their Sustainable Energy Action Plans (SEAPs). These municipalities have set up specific urban GHG emission reduction targets, which cumulatively represent a commitment to reduce the urban carbon footprint in BiH by 870,000 tCO₂ by 2030 (See Technical Annex III for the status of the SEAPs). Energy efficiency and renewable energy improvements in public buildings constitute the largest part of this commitment (as per SEAPs).
6. The implementation of the LCUD concept in BiH requires involvement of authorities from all levels of government. However, as the implementation of the LCUD concept requires the adoption and implementation of certain economic instruments, the concept must be based on creation of adequate business models. Such business models need to be founded within appropriate public-private partnership arrangements. These arrangements ensure the involvement of responsible public authorities from all governmental levels as well as the private sector (through energy efficiency related SMEs). These actors serve as delivery agents for the promotion of the LCUD concept in BiH.
7. To create an effective business model for low-carbon urban projects preparation and implementation supported by affordable financing for the public sector, several barriers must first be addressed. These barriers can be grouped into three main categories: a) financial, including limited access to finance and low financial returns; b) insufficient local capacities; and c) lack of a broader enabling environment. These barriers (also referred to as root causes in the project’s Theory of Change) are summarized in the Table 1 and further elaborated in the Technical Annex IV.

²<http://www4.unfccc.int/submissions/INDC/Published%20Documents/Bosnia-Herzegovina/1/INDC%20Bosnia%20and%20Herzegovina.pdf>

Table 1 Barriers to Low-Carbon Urban Development (LCUD) in BiH

Description of Barrier	Project Response (and relevant project component)
Limited access to finance and low financial returns	
<ul style="list-style-type: none"> ▪ Municipal authorities' and SMEs' poor financial standing, high level of debt and lack of credit-worthiness constrain their ability to self-finance and leverage third-party financing for infrastructural LCUD projects 	<p>Work with Environmental Funds (EFs) in FBiH and RS to design, build capacities for and support implementation of the financial mechanism for infrastructural LCUD projects (Component 1)</p>
<ul style="list-style-type: none"> ▪ Limited availability of long-term financing at affordable rates: financing from IFIs and commercial banks does not match the scale and risk/return profile of infrastructural LCUD projects and municipal borrowers. EFs' revenue base (and capacity and relevant regulatory framework as noted later in this table), are inadequate and do not allow scaling-up financing for infrastructural LCUD projects. 	<p>Support implementation of relevant regulatory measures to help expand their capitalization and revenue base, and improve effectiveness of EFs' programming (Component 1)</p>
<ul style="list-style-type: none"> ▪ Reduced financial returns from investment in low-carbon measures in public sector (in part due to prevalence of cheap domestic coal as baseline heating source, as well as widespread under-heating and inadequate building maintenance practices) making these investments unattractive for private investors. 	<p>Work with EFs to design and implement financial mechanism for infrastructural LCUD projects which address these barriers (Component 1)</p>
Inadequate local capacities for LCUD (public facilities and utilities)	
<ul style="list-style-type: none"> ▪ Lack of capacity to prepare and implement technically and economically feasible projects, as well as incorporate low-carbon considerations into urban development plans and programs, in particular in the key resource-consuming/emission-producing urban sectors, such as public facilities and utilities. 	<p>Strengthened capacities of municipal managers, companies and utilities to monitor resources use, prepare and implement feasible infrastructural LCUD projects (Components 2 and 3)</p>
<ul style="list-style-type: none"> ▪ There is no system in place to systematically collect and analyze information on resources use/GHG emissions in cities, which limits the ability of municipal authorities to identify and pursue the most cost-effective climate change mitigation actions. 	<p>Introduction of an urban MRV system for key urban emitting sectors, such as facilities and utilities (Components 2 and 3)</p>
Lack of enabling policy and regulatory environment for LCUD	
<ul style="list-style-type: none"> ▪ Enforcement of relevant environmental policies and regulations (e.g. laws and by-laws on energy efficiency, regulation on the technical requirements for thermal protection of buildings and rational use of energy, waste management strategy, etc.) is patchy due to complex administrative and governance structure, as well as because of the lack of capacities among relevant national/sub-national authorities to effectively oversee and monitor their implementation. 	<p>Work with relevant entity and state-level authorities to address their capacity gaps to enforce policies and regulations in support of the NDC under UNFCCC and the National Low-emission development strategy (Component 4)</p>
<ul style="list-style-type: none"> ▪ City managers, municipalities and urban residents have not yet embraced the principles of low-carbon behavior. They lack basic awareness and understanding about resource efficiency, sustainable consumption as well as environmental and health impacts resulting from urban emissions. 	<p>Conduct awareness-raising and outreach to urban residents and authorities (Component 4); support local/community low-carbon initiatives in cities and towns (Components 2 and 3)</p>

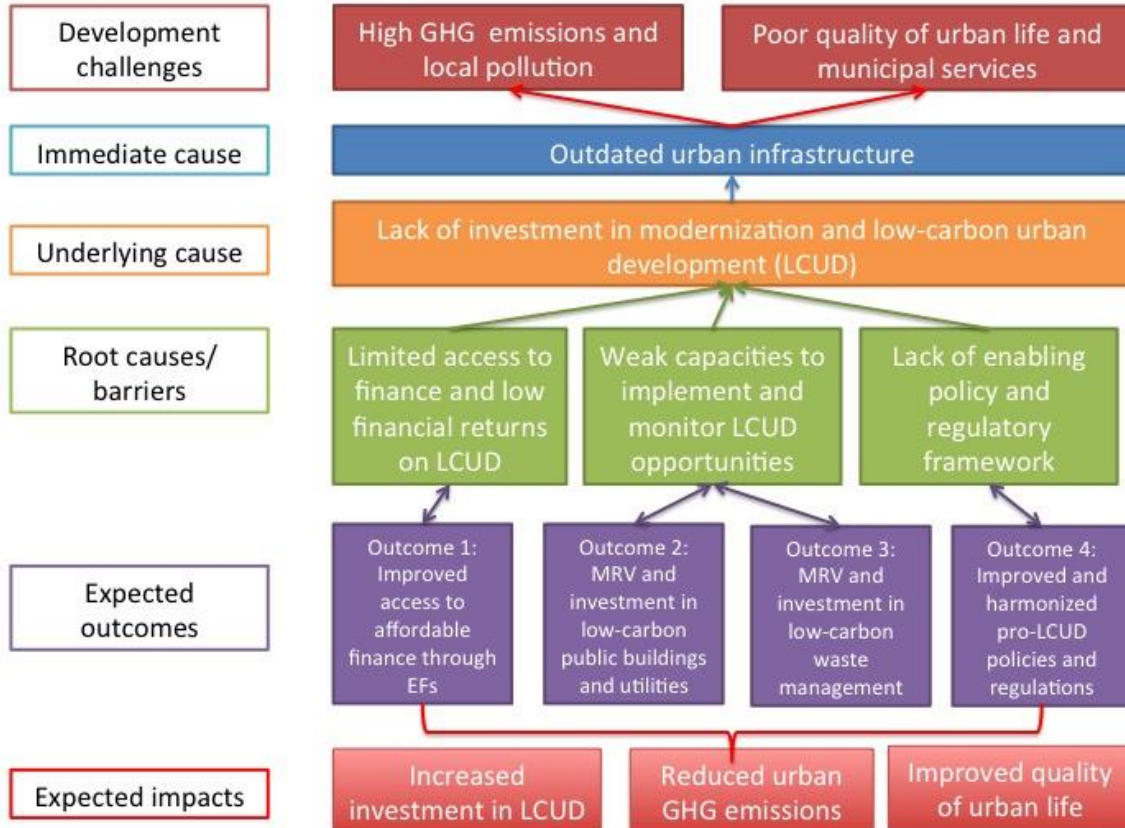
II. STRATEGY

8. The objective of the project is to leverage investment for transformational shift LCUD in BiH thereby promoting safer, cleaner and healthier cities, and reducing GHG emissions.
9. To this end, the project will facilitate investment in technically and economically feasible low-carbon solutions in key urban sectors, and then promote their wider uptake by municipalities and the private sector via dedicated financial mechanism and funding windows established within the environmental finance frameworks in BiH, as well as by accelerating implementation of a favourable policy and regulatory framework at the entity and national levels. The project will facilitate the transformation of the market for low-carbon urban solutions by creating and expanding opportunities for businesses such as ESCOs and waste management companies to get involved in the provision of low-carbon services and products in cities.

Theory of change

10. Figure 2 summarizes the theory of change of the project, showing the development challenge, immediate cause, underlying cause and the root causes/ barriers, as well as a hierarchy of expected results of the project, from outcomes to overall impact that has been identified in accordance to specific political, regulatory, financial, technical and environmental risks and assumptions (detailed analysis given in section IV, ii Risk Management).

Figure 2 Theory of Change



11. To remove aforementioned three groups of barriers (root causes) related to inadequate access to finance, local capacities and policy and regulatory framework for LCUD, the project adopts a three-pronged approach. First, it will support key environmental finance institutions (i.e. environmental funds) to establish innovative financial mechanisms for LCUD (Component 1). Under Component 2 and 3, the project will work at the local level with relevant public authorities to help build their capacities to identify, carry out and monitor low-carbon projects in key urban GHG emitting sectors, public facilities and utilities (Component 2) and waste management and logistics (Component 3). Finally, under Component 4, at the entity/sub-national level the project will work with relevant public authorities to design and adopt policies and regulations to enable the scale-up low-carbon investment. In addition, national awareness raising and an advocacy campaign will be conducted to secure public support and promote behavioral changes towards low-carbon urban living.
12. **Component 1** addresses the identified financial barriers by strengthening the EFs' capacity to finance infrastructural LCUD projects. Building on UNDP's prior work with EFs (see section III, ii Partnership), the project will support the design of an innovative financing mechanism that will support a gradual shift from predominantly grant-based financing of LCUD towards an ESCO-based model whereby public subsidies (grants) are used to address specific structural, technical and financial barriers in BiH. In doing so, the project will simultaneously address the following barriers which limit municipalities' access to finance (see Technical Annex IV for details):
 - Limited EFs' revenues base/sources of capitalization;
 - SMEs' limited borrowing capacity preventing them to offer ESCO services on a larger scale;
 - Municipalities high level of indebtedness preventing them accessing commercial financing;
 - Technical and structural barriers related to specific LCUD investment, which make them non-bankable from the point of view of commercial banks.
13. Since the targeted sectors are public facilities and municipalities, the pivotal role in this project is that of the EFs. Under the proposed financial mechanism, the EFs will act as ESCO funds thus compensating both i) for SMEs limited borrowing capacity and ii) for municipal high indebtedness, restricted access to commercial financing and limited resources for projects preparation and implementation.
14. **Component 2** addresses the municipalities' lack of capacity to prepare and implement infrastructural LCUD projects in public buildings and utilities. Building on earlier UNDP-supported efforts to promote Energy Management Information System (EMIS) in public buildings, the project will expand the scale and scope of its application and facilitate implementation of low-carbon measures in public facilities and utilities (e.g. public lighting, water supply and sanitation system – large energy users with high potential for resources saving). EMIS will form a core of the nation-wide MRV system used to monitor energy and water resources, waste generation and associated GHG emissions by the cities. EMIS will also be used to prioritize, benchmark and monitor EFs' funding (under Component 1). Based on the analysis of EMIS data and detailed energy audits and in line with SEAPs, a package of cost-effective low-carbon measures will be identified, covering a range of resource saving and

renewable energy measures and technologies (heating, water, lighting, waste, etc.). GEF resources will cover the cost of such project identification, preparation, and technical oversight, and will also finance the piloting of 4 projects.

15. **Component 3** addresses identified shortcomings in municipal capacities for LCUD in the waste management and logistic sector. A functional MRV system and optimal transport collection routes will be introduced for the waste management sector to minimize emissions and improve effectiveness; including the development of an IT-based system for waste data collection and analysis, assessing feasibility of waste collection route optimization, and capacity buildings at the level of municipalities, cantons in FBiH and entities and relevant Ministries for MRV implementation.
16. **Component 4** addresses gaps in the enabling environment for LCUD at state and entity levels by promoting the adoption and supporting enforcement of essential policies and regulations, institutional coordination (vertical and horizontal) among relevant public authorities, and providing targeted capacity building and training support to relevant authorities. For example, GEF-supported work on introducing EMIS in public facilities will directly contribute to the strengthening of enforcement capacities of relevant authorities to monitor energy performance in buildings and ensure consistency with established minimum energy performance standards. The project will also support a BiH-wide public relations and advocacy campaign about low-carbon cities.
17. The project has been designed to address specific barriers to investment in LCUD, as articulated in the theory of change, while reflecting proven international practice and specific circumstances of BiH. The project includes technical assistance focused on removal of barriers to promote long-term and sustainable market transformation for LCUD. The provision of targeted investment support to stimulate private investment in public sector buildings, coupled with systemic barrier removal activities, is considered best practice and a cost-effective means of creating markets: this is an approach widely used in OECD countries, for instance in the European Union³, as well as by the Multilateral Development Banks.
18. The proposed approach represents **the best strategy** to address the identified root causes to scaling-up public and private investment in LCUD because it:
 - a. Addresses municipalities' lack of capacities to develop project proposals, and technical and financial capacities to implement them;
 - b. Increases capacity of SMEs to engage in an ESCO or quasi-ESCO business model by removing the capital investment requirements from their responsibilities;
 - c. Links the repayment for SMEs' service and works with project performance thus making SMEs responsible for quality and performance of their solutions and services. Repayments come from the EFs and not from municipalities, thus the perceived risk of non-payment by municipalities is eliminated;
 - d. Represents a strong departure from predominantly grant-based financing towards predominantly non-grant financing, where grant components are limited to addressing specific barriers to project bankability;

³ https://ec.europa.eu/energy/sites/ener/files/documents/report_financing_ee_buildings_com_2013_225_en.pdf

- e. Allows EFs as public ESCO funds to act as aggregators and assume responsibilities for financing priority low-carbon investment in the public sector focused on 'difficult' cases where market-based criteria would otherwise deem those projects as non-bankable;
- f. Provides strong impulse for EE market transformation by relaying on local SMEs as delivery agents, creating employment opportunities across the country.

III. RESULTS AND PARTNERSHIPS

i. Expected Results

- 19. The project aims to leverage investment for transformational shift towards low-carbon urban development (LCUD) in BiH. The project will scale-up and diversify investment in LCUD in BiH by removing financial, capacity and policy barriers.

Component 1 Innovative Financing Mechanism for Implementation of Low-Carbon Urban Development Concept (LCUD)

- 20. Component 1 has two expected outcomes:

Outcome 1.1: Strengthened public capacities to programme and monitor environmental finance for LCUD

Outcome 1.2: Increased and diversified sources and modalities of public investment in LCUD.

Output 1.1: Regulations for polluter pays principle developed

- 21. **Activity 1.1: Develop necessary regulations for instituting polluters pay principle (PPP) and improving the system for collecting PPP fees** (which is the primary source of EFs' revenues). The PPP principle is one of the most commonly used tools for environment protection. It is based on principle that those who produce pollution should bear the costs of managing it to prevent damage to human health or environment. The project will support the EFs to prepare and adopt the necessary regulations to enable collection of fees based on various sources of environmental impacts related to energy efficiency and environment sector thus enabling both EFs to significantly scale-up their funding base for subsequent investment in LCUD.

Output 1.2: Financial mechanism (ESCO Funding window) established at EFs and capitalized with EF's own finance

- 22. **Activity 1.2: Define the process and criteria for the financial mechanism for LCUD** (ESCO funding window within EFs). The mechanism should support energy efficiency (EE) retrofit of public facilities, EE public lightning and water saving measures according to NEEAP priorities and in line with municipalities' SEAPs. Recognizing complex administrative and political structure in BiH, the project will work and support both EFs separately at first to come up with design of the financial support mechanism for LCUD, which is appropriate for each BiH entity. To ensure that approaches are harmonized among entities, the project will also work with MOFTER and facilitate inter-entity dialogue and exchange of relevant experiences and approaches (see Component 4).

23. The project will develop the ESCO business model processes (performance-based), eligibility criteria for grants, monitoring and verification procedures for proving savings achieved, and procurement methods with criteria for awarding grants and revolving loans. Capitalization of the ESCO funding window will be done from the EFs' own resources. To test and demonstrate the ESCO funding mechanism, the EFs will select on a competitive basis several pilot projects to be implemented (under Component 2) according to the developed business model and specified eligibility criteria.

Output 1.3: At least 40 staff of relevant institutions gaining first-hand experience (through trainings) on innovative finance options for LCUD and at least 100 representatives of relevant SMEs informed about the ESCO-support mechanism

24. **Activity 1.3.1: Provide training to EFs' staff to implement ESCO-support mechanism.** This activity will involve tailored seminars and on-the-job training, along with organization of information workshops for municipalities and SMEs about the mechanism and on the roles and responsibilities of all parties involved. At least 30 staff of the relevant institutions (Ministry of Foreign Trade and Economic Relations of B&H, Ministry of Spatial Planning, Construction, and Ecology of Republic of Srpska; Ministry of Environment and Tourism of Federation of BiH; Fund for environmental protection of FBiH; The Environmental Protection and Energy) will gain first-hand experience with implementation of proposed mechanism and at least 100 representatives of relevant SMEs from field of energy efficiency informed about ESCO-support mechanism.
25. **Activity 1.3.2: Provision of on-the-job training and advisory services for at least 10 staff of the EFs and relevant ministries.** This activity will build the capacities of relevant staff regarding various sources of climate and environmental finance and potential sources for additional capitalization of EFs and diversification of their revenues.

Output 1.4: Contractual and implementation arrangements for repayment mechanism established

26. **Activity 1.4: Develop contracts, and internal and external regulatory documents related to repayment of EFs for works and services.** The key feature of the ESCO-support mechanism is that municipality must repay EFs for the low-carbon works and services financed by EF. This activity will support elaboration of contractual modalities (between EFs and 6 Municipalities), as well as required EF's internal and external regulatory documents to enable such repayment transactions (in consultation and involving, as necessary, the Ministry of Finance of both entities).

Output 1.5: Measurement, Reporting and Verification (MRV) for implementation of ESCO-support mechanism established

27. **Activity 1.5: Develop monitoring and verification procedures and systems to clearly establish costs savings resulting from the implementation of low-carbon projects in selected municipalities.** The selection of municipalities will be organized through a public call for application containing the previously defined criteria and will endeavor to assure equal distribution of municipalities selected. The criteria will evaluate following aspects: motivation to work (based on the collaboration with municipalities during the implementation of

previous projects), existence of relevant municipal strategic documents (SEAPs or similar), municipalities' ability to co-finance the projects, overall quality of project proposals, number of projects' end-users etc. Detail criteria for selection of municipalities will be defined in the inception phase of the project and approved by the Project Board.

Component 2 Low-carbon public facilities and utilities

28. Component 2 has two expected outcomes:

Outcome 2.1: Strengthened capacities of municipal managers, companies and utilities to monitor resources use, prepare and implement feasible infrastructural LCUD projects

Outcome 2.2: Reduced GHG emissions from pilot investment.

29. Under Component 2, the project will work with municipalities to build their capacities to identify, prioritize, and implement low-carbon investment projects involving public facilities and utilities. Such projects will feature integrated energy efficiency and renewable energy measures, including water saving, street lighting, electric vehicles for waste collection, etc., to demonstrate and pave the way to smart buildings/ smart cities transformation. The implemented projects will be fully documented to present guidelines for further replication of practices and integration of additional LCUD segments within the existing SEAPs.

Output 2.1: EMIS expanded to cover all types of public facilities and resources use in public utilities (1,500 buildings)

30. **Activity 2.1: Apply EMIS in municipal utilities.** The project will support EMIS expansion covering all municipalities in the areas of public lightening, water distribution and public sector buildings in each entity and Brcko District (covering at least 120 municipalities in total). The introduction of EMIS will provide a clear view of energy consumption and GHG emissions in public utilities, as well as possibilities for energy and resource savings and GHG emission reduction. The project will expand the EMIS database through an annual Call for Proposals for identification of public utilities interested in LCUD investment, as follows:

- Public facilities submit an application by completing an expression of interest (providing basic data), followed by the creation of accounts (static input data) in EMIS;
- Further input/information on consumption and costs of energy and water in the last 36 month period is collected and entered into EMIS. During this process, the project will provide technical support and assistance to contact persons in the identified public facilities. In addition, the project team will prepare technical, economic and environmental parameters and energy conservation/GHG emission reduction potential indicators within the EMIS database, managing, administrating, keeping maintenance, monitoring, and undertaking error identification and correction activities for further development of the EMIS database.

Output 2.2: Municipal staff trained and equipped to apply EMIS (1,500 end-users trained)

31. **Activity 2.2: Organization of training on EMIS application and its use for project identification.** The project will provide training for end-users on EMIS, energy / GHG emission management in public sector for abovementioned 1,500 identified public sector end-users. The project will organize training facilities throughout BiH, including provision of required equipment (laptops) and facilitating travel arrangements for participants. The project will contact all identified end-users, provide information, conduct training on EMIS and provide technical support and assistance to trained persons throughout project implementation.

Output 2.3: 45 LCUD investment projects in public facilities and utilities implemented

32. **Activity 2.3: Identification, preparation and implementation of LCUD investments based on the ESCO model** (energy saving performance-based). The project will support project preparation, procurement of ESCO services by EFs, and project oversight. At least 4 LCUD investment projects (one in each of 4 selected municipalities) will be co-financed by project funds of up to a total of USD 450,000 in the second year of project implementation. The project funds are intended to be allocated to four projects in four different municipalities based on UNDP's public call. The average amount of project funds allocated to each municipality shall be around USD 110,000 per municipality, however, the exact amount of investment will be determined in line with established eligibility criteria and based on received applications. The Project Board will, during the first year of project implementation, develop and adopt the methodology and eligibility criteria based on which the four municipalities will be chosen. The eligibility criteria factors would be such as (for example and not limited to):

- project readiness (for example technical specification, main design);
- amount of expected annual GHG emission reduction;
- expected energy and costs savings;
- social/human development effects (number of vulnerable groups benefiting from investments);
- Investment based on SEAPs and/other relevant municipal planning documents.

An additional 41 LCUD projects financed by EFs will use the project's developed financial mechanism during the remaining three project years.

Output 2.4: At least 15 SEAPs and/other relevant municipal planning documents prepared to scale-up piloted investment

33. **Activity 2.4: Support selected municipalities in monitoring the implementation of pilot infrastructural LCUD projects**, including documenting and analyzing results and benefits and integrating them in the scope of SEAPs. The project will raise awareness of the importance and benefits of the infrastructural LCUD projects. In addition, the project will ensure large-scale promotion of the results through communication and awareness channels to increase interest in further replication of the piloted investments.

Component 3 Low-carbon waste management and logistics

34. Component 3 has two expected outcomes:

Outcome 3.1: Reduced GHG emissions from improved waste management system as a result of waste minimization

Outcome 3.2: Reduced GHG emissions from improved waste management system as a result of waste collection route optimization.

Output 3.1: MRV system for waste sector developed, institutionalized and legally recognized

35. **Activity 3.1: Develop the Solid Waste and Recycling Database Management System** intended for monitoring of municipal sources of waste and resulting GHG emissions (“waste sector MRV”). The system will include a database of waste sources, including waste types, quantities, qualities/composition and waste handling practices and appropriate IT solution to operationalize and implement it. For this purpose, IT needs will be assessed and software provided. The beneficiaries of this activity are primarily the employees of municipal utility companies that will be trained to insert data and maintain the database. In addition, the database will be a useful source of information for employees of municipalities, cantons of FBiH, entities, etc.
36. The system will enhance the solid waste reporting and measuring system, while ensuring that the information most needed to plan, implement, and track performance is widely available. Data will be collected from the public utilities, but also from the SME dealing with the waste management. The project will develop detailed data collection protocol and deliver it to data providers. Standard Operating Procedures (SOPs) for data verification, compilation and data analysis will also be prepared and training on their application provided to system operators (municipalities and EFs).
37. Finally, a comprehensive legal mandate will have to be given to all system operators, waste data compilers and collectors in order to ensure that data management and reporting are fully in compliance with the legislation. For this purpose, support will be provided to prepare required regulatory documents and facilitate their adoption by relevant authorities at local and entity-level, as appropriate (see also Activity 4.2 which deals with national and entity-level policies and regulation).

Output 3.2: Municipal managers (45) and Environmental Fund and environmental Ministry’s staff (10) trained and equipped with skills and tools to improve and monitor the waste management system

38. **Activity 3.2: Provide training and operational support for MRV implementation.** This activity will include delivery of tailored training package to municipal and EFs’ and Ministries’ staff on system operation (data analysis and decision-making), as well as training to data collectors and providers on application of relevant SOP (see Activity 3.1).

Output 3.3: Reformed waste fee system introduced

39. **Activity 3.3: Revision of the waste fee system to introduce weight- or volume-based fees as economic incentives to promote recycling.** The level of fees will be established based on the actual cost of waste treatment and associated environmental impacts. This activity will contribute to the achievement of two Project Outcomes : Outcome 3.1 “Reduced GHG emissions from waste minimization” as it will lead to increased recycling and Outcome 1.2 “Increased and diversified sources and modalities of public investment in LCUD” because waste fees are an additional source of EF’s revenue base.

Output 3.4 Green logistic scheme for municipal waste recycling designed and piloted in 4 municipalities

40. **Activity 3.4: Design and pilot municipal green logistic schemes for waste recycling.** The project will prepare feasibility studies for low-carbon transport and logistics in each of the selected municipalities, including consideration, assessment and testing of various low-carbon alternatives, such as alternative fuels, optimized routing, capacity and load factors, use of ICT.
41. The selection of municipalities will be organized through a public call for application containing the previously defined criteria and will endeavor to assure equal distribution of selected municipalities in both BiH entities. The criteria will evaluate following aspects: motivation to work (based on the collaboration with municipalities during the implementation of previous projects), existence of relevant municipal strategic documents (SEAPs or similar), municipalities’ ability to co-finance the projects, overall quality of project proposals, state of the municipal waste management systems including the number of end-users etc. Detailed criteria for selection of municipalities will be defined in the inception phase of the project and approved by the Project Board.

Component 4 National and sector policies, institutional coordination and awareness raising on LCUD

42. Component 4 has two expected outcomes:

Outcome 4.1: LCUD-related policies adopted and institutional coordination strengthened

Outcome 4.2: Increased awareness of urban dwellers regarding LCUDs.

Output 4.1: Harmonized environmental related rules and regulations developed and enacted across BiH

43. **Activity 4.1: Harmonization of rules and regulations, and institutional coordination within the environmental sector across environmental authorities in BiH.** The project will review relevant regulations in FBiH, RS and Brčko district related to LCUD, which need to be harmonized to prevent gaps and loopholes. The project will develop a joint platform (or use already established joint structures) for enhancing and promoting further cooperation and harmonization of approaches between environmental authorities in BiH, through joint coordination of analysis of experience, incorporation of lessons learned from the project, and providing recommendations for assurance of standardized rules and regulations within the environment sector. For example, for the establishment of effective MRV in public facilities

and resources use in public utilities (Activity 2.1) and waste sectors (Activity 3.1), it is necessary to ensure provisions in the constitutions / legal instruments of municipalities and entities which would enable each authority to adopt laws to address the collection, aggregation, and analysis of energy/waste related data for effective GHG monitoring, identification and prioritization of low-carbon activities.

Output 4.2: National awareness-raising campaign conducted reaching out to at least 500,000 urban citizens

Activity 4.2: Conduct a national awareness-raising campaign on LCUD. The key objective of the campaign will be to reach the targeted urban population to raise awareness of the importance of incremental actions by each citizen and to convey that everyday actions can lead collectively to large GHG emissions reductions. Awareness raising will target energy use, waste and transport. A comprehensive campaign plan will be elaborated and implemented, including specific goals, target audiences, messages, promotional activities, partners and networks, as well as an M&E plan to measure the urban population reached. The campaign will target at least 50% of women, and measurement of the media campaign's outreach will include media time (seconds), number of awareness rising events, number of promotional events held, number of promotional materials distributed and number of targeted audience reached through the social media networks. International best practices will be considered and reflected in the campaign design, such as, for instance, the successful EU-wide "You Control Climate Change" campaign ("CHANGE: Turn down. Switch off. Recycle. Walk").

Monitoring, evaluation, compilation of results, and knowledge sharing

44. The project includes monitoring and evaluation (M&E) of all four project Components, and compilation of results and lessons learned, and knowledge-sharing activities through several project coordination, presentation and training activities.
45. **Quantitative evaluation of energy savings and GHG emissions reductions achieved by the project:** In this activity, UNDP will conduct quantitative evaluation of the energy savings and GHG emissions reductions resulting from the project-facilitated investment in LCUD in line with relevant GEF-STAP methodology (Component 2).
46. **UNDP will carry out the required monitoring and evaluation of the project** including conducting annual reviews, and organizing a midterm review and terminal evaluation. The UNDP project team will compile lessons learned and share them throughout the project period via electronic dissemination and at a national conference to be organized by the project near its close.
47. For more details on M&E, including scheduling and allocation of responsibility and budget amounts for specific tasks, reports, and evaluations, please see Section VII and Table 7.
48. In terms of the **knowledge sharing**, results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. The UNDP Energy and Environment Sector Communication officer will ensure that all relevant project information and news are shared in a timely manner with the relevant audience.

49. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation through lessons learned. The project will identify, analyze, and **share lessons learned** that might be beneficial in the design and implementation of similar future projects.
50. There will be a two-way flow of information between this project and other GEF projects (locally and regionally) or any other project of a similar focus, within the standard donor coordination meetings.
51. The project will build upon the knowledge base and institutional relationships created from the experiences of GEF-funded national and international LCUD projects and other relevant projects implemented by UNDP. The project will through its activities enable governments, municipality representatives, NGOs, and other stakeholders to: (1) share critical knowledge and collaborate more effectively across boundaries, using a wide array of tools and learning methods; (2) develop training courses tailored to the strategic needs of mentioned institutions; (3) share knowledge throughout BiH under the raising awareness campaign.
52. This project will contribute to knowledge sharing by promoting the adoption and supporting enforcement of essential policies and regulations, institutional coordination (vertical and horizontal) among relevant public authorities, and providing targeted capacity building and training support to relevant authorities. For example, GEF-supported work on introducing EMIS in public facilities will directly contribute to the strengthening of enforcement capacities of relevant authorities to monitor energy performance in buildings and ensure consistency with established minimum energy performance standards.
53. Finally, UNDP project team will compile lessons learned and share them throughout the project period via electronic dissemination and at a national conference to be organized by the project near its close.

ii. **Partnerships**

54. Project will build on and expand existing partnerships between UNDP, EFs and municipalities across BiH within the framework of the on-going multi-partner **UNDP Green Economic Development (GED) project** (2013-2018, US\$ 11.2 million). Through the GED project, UNDP supports the roll-out and operationalization of the EMIS throughout the country, aiming at sub-national/cantonal public sector facilities (educational, healthcare and administrative institutions). A key aspect of the GED project is the institutionalisation of energy management activities within public sector facilities, notably through the preparation of detailed energy audits and enabling building managers to monitor energy consumption through EMIS. The Project will leverage the achievements of GED project and will expand the EMIS database by covering all types of municipal facilities and resources use.
55. Under the GED project, UNDP has conducted extensive technical and economic analysis of EE-RE retrofit projects at the level of individual public buildings, as well as aggregated analysis at municipal and cantonal (in FBiH) levels. UNDP experience shows high demand for partial grants combined with municipalities' own financing. Over the 3 years of project operation the grant-to-own financing ratio has been steadily reduced from 1: 1 at the beginning to 1: 3

now. In other words, for each dollar of grant, the municipality must commit 3 dollars of its own funds. In addition to grants, UNDP also offers free project identification and formulation services (i.e. preparation of detail energy audits for buildings).

56. Recognizing that the grant-based financing model is neither sustainable, nor affordable for BiH in the long-run, the GED project in partnership with EFs initiated a shift from grant-based financing towards a revolving lending approach. In the last three years, the revolving financing modality has been developed (including a study on the improvement of financial mechanism in EFs, internal acts, evaluation procedure, methodology, TOR for selection of strategic financial partner, etc.) and launched in FBiH in July 2016 (launch in RS is expected in 2017).
57. The project will also work with several ministries under Component 4, at the entity/sub-national level, apart from the EFs. In particular, the project will work with the **Ministry of Foreign Trade and Economic Relations of B&H (MOFTER)**; as well as **the Ministry of Spatial Planning, Construction, and Ecology of Republika Srpska (MSPCE RS)**, the **Ministry of Environment and Tourism of Federation of BiH (MET FBiH)** and the authorities in **Brčko district** with harmonization of relevant state/entity level policies and regulations on low-carbon urban development, and institutional coordination within the environmental sector across relevant authorities.
58. The project will also work closely with the **UNDP-led GEF-financed “Third National Communication (TNC)”** project regarding the design and practical steps involved in the establishment of urban MRV systems for waste and energy management (Component 2 and 3). Through its support to expanded EMIS the project will lay a solid foundation for systematic data collection at the local level, which can then be aggregated at the FBiH and RS levels, and feed in the national GHG inventory process and MRV.
59. **The UNEP-GEF “Capacity Development for the Integration of Global Environmental Commitments into National Policies and Development Decision Making”** project supports the establishment of central environmental information and monitoring system for key environmental indicators. The proposed UNDP-GEF project will concentrate on the local/municipal level, but will strive to ensure that local/municipal data-bases and monitoring process for energy and waste sub-sectors specifically are compatible with and feed into the central system to be supported by the UNEP-GEF project.
60. Given the past activities related to energy efficiency in BiH, a Memorandum of Understanding on **“Energy Efficiency Donor Coordination in BiH”** was signed in 2012 defining the cooperation between donors and agencies working in the area of EE in BiH. UNDP will continue to create synergies and collaborate with **GIZ’s “Energy Efficiency Consultancy BiH”** project on various policy-level activities related to energy efficiency. The project will also build upon the work done under the **WB “Energy Efficiency Project”** which provides financing for energy efficient retrofits of public buildings (expected to be completed in 2017).
61. The project will also liaise closely with other projects under the GEF Cities IAP and will attempt to learn from and use similar methodologies and indicators as they evolve (see <https://www.thegef.org/topics/sustainable-cities>).

iii. Stakeholder engagement

62. Due to its global reach and partnerships with governments in BiH, different UN organizations, donor organizations, private sector and civil society, UNDP BiH represents a well-prepared and suitable partner for reducing the urban carbon footprint in BiH in a coherent and sustainable manner. Some of the recently achieved results in the area of energy efficiency and climate change mitigation measures are the following: more than 60 public buildings entered the heating season with improved energy efficiency, reducing heating costs by over 30% and emissions of GHGs by more than 4,000 tons per year; energy consumption in public sector buildings has decreased from 220 kWh/m² to 215 kWh/m², while the volume of public investments in energy efficiency by partner authorities has doubled, reaching US\$ 3.4 million. In addition, the UNDP Country Office's relationship with domestic partners is a strong advantage for implementing complex and inclusive approaches such as LCUD given the socio-political context of BiH. The UNDP Country Office is experienced with the design and application of integrated approaches to local development that have contributed to the economic recovery of BiH through the improvement of legal, strategic and operational frameworks and assistance in implementation.
63. Stakeholder engagement has been assured through the involvement of different interest groups throughout project preparation. The consultation workshop to present the project design involved 41 representatives of different institutions (including different governmental levels, international organizations, CSOs, SMEs, etc.). Of note was that 20 out of 41 participants were women.
64. **Civil society organizations (CSOs):** BiH is made up of three 'constituent' peoples – Bosniaks, Croats and Serbs – along with smaller minority groups, the largest of which are the Roma. There are no "indigenous people" in BiH, as defined by international conventions and protocols. However, a number of relevant CSOs will be closely involved in project implementation. The following CSOs will be invited to collaborate in the design and implementation of public outreach activities under Component 4:
- *Regional Education and Information Center for Sustainable Development in South-East Europe (REIC):* REIC is coordinating activities of the regional Urban Empathy project for BiH aimed at bringing together projects, policy makers and stakeholders to share concrete results to improve the efficiency of sustainable urban policies in the Mediterranean region;
 - *Center for Development and Support (CRP):* CRP is involved in several educational and awareness raising activities on the topics of sustainability and energy efficiency in BiH;
 - *Center for Education and Raising Awareness of Energy Efficiency (Energis):* Energis specializes in provision of technical services and implementation of energy efficiency projects in BiH.
65. **Small and Medium Enterprises (SMEs)** are important delivery mechanisms for infrastructural LCUD projects' design and implementation, and the key driver for market transformation. SMEs are also poised to benefit from increased demand for works and services related to LCUD projects design and implementation, and would respond with employing more staff to

meet that increase. SMEs can be an important generator of new employment, which is a key development issue for BiH, where the unemployment rate is extremely high (currently official unemployment rate of 27.5%, as per ILO methodology⁴). Under Component 2, preparation of energy audits and implementation of infrastructural LCUD projects will be conducted by local SMEs. SMEs will also be important stakeholders in the process of MRV set-up for the waste sector (Activity 3.1).

66. The SMEs are aware of the ESCO business model for LCUD project implementation in the public sector and some offer their services on a ESCO or quasi-ESCO business model. In particular, fuel-switching projects in public facilities are gaining momentum (e.g. switch from coal or light fuel oil to biomass as a source of fuel). Private companies (acting as Independent Heat Suppliers) invest in fuel switching, as well as ensure biomass supply and adequate system operations. The **main barrier** for SME sector to grow their ESCO-based business segment is their limited potential to take on loans for financing such services. The SMEs usually have limited assets to offer as collateral to the banks, and limited possibilities to raise finance against their balance sheet. Typically, ESCO projects require large capital outflow at the outset of a transaction and repayments come steadily in small instalments over a period of 5 to 7 years. Therefore a typical SME in BiH can engage in only 1 or 2 such projects a year, and wait for 5 to 7 years before the loan is repaid and new projects can be initiated. The project will directly address this barrier by supporting the establishment of ESCO Fund mechanism under Component 1.

iv. Mainstreaming gender

67. To ensure this project's successful implementation and long-term sustainability it is essential to consider how project interventions may impact men and women differently. Therefore, gender is one of the cross-cutting issues requiring consideration at the planning, implementation and evaluation stages of the project. Gender sensitive low carbon development is a multi-dimensional approach that encompasses social transformation and changes in production patterns and technologies, avoiding dangerous climate change. This includes reducing GHG emissions, while recognizing the different energy needs of people and addressing existing gender inequalities in carbon emission and energy production.
68. Within the project context, gender mainstreaming includes identifying gaps in equality using sex-disaggregated data, developing strategies and policies to close those gaps, devoting resources and expertise to implementing such strategies, monitoring the results, and holding individuals and institutions accountable for outcomes that promote gender equality.
69. In general, female employment in the services sector in BiH, according to Labour force surveys,⁵ is around 64.5% (services sector includes public administration, defense, education, health and social work activities). Since women represent a significantly higher share of public sector workforce and, therefore, will directly benefit from the improved occupancy conditions in their work space⁶ it has been decided to set the project impact target of 60% women as project direct beneficiaries. Additionally, as an illustration, the share of female

⁴ BiH Agency for Statistics, 2017

⁵ http://www.bhas.ba/?option=com_content&view=article&id=113&lang=en

⁶ Assumes 350 users/occupants per public building, based on data from EMIS.

employees in education as one of the predominant public sectors in BiH, is particularly high and varies as follows: 98% of female educators in pre-school institutions; 71% of female primary school teachers; 60% of female secondary school teachers and associate; and 43% of female teachers and assistants in higher education.

Table 2 presents aggregated targets for project direct beneficiaries, including women beneficiaries.

Table 2 Project Direct Beneficiaries

Number of LCUD investment projects in public facilities	# of buildings	45
Direct beneficiaries	# of people	15,000
Share of women beneficiaries	%	60
# of women beneficiaries	# of women	9,000

70. In addition, at the output level, the following gender-sensitive outputs and targets have incorporated in the project result framework:

- Number of public sector technical staff and policy makers trained: *at least 30% women*;
- Number of gender responsive SEAPs supported by the project: *minimum 10 gender-sensitive SEAPs*;
- Number of people reached out by national LCUD awareness raising campaign: *at least 50% women*;

71. More detailed information is provided in the Gender analysis in Annex L.

v. South-South and Triangular Cooperation (SSTrC)

72. The project will directly support SSTrC through three cooperation modalities: (i) bi-lateral knowledge exchanges and exploration of technology transfer with other UNDP-GEF projects in the region; (ii) cooperation with and contribution to other UNDP projects and initiatives in developing countries including sharing project successes and lessons learned; and (iii) contribution to and learning from information exchange platforms that promote sharing of results and lessons learned within the country and region, and with the GEF community and beyond.

73. Already the project has benefited from SSTrC as the project will replicate the EMIS that was developed by the UNDP-GEF Energy Efficiency Project in Croatia ('Removing Barriers to Improving Energy Efficiency of the Residential and Service Sectors'). That project (2004-2011) monitored, analyzed and reported on the energy and water consumption in public buildings and reached nearly all of the public buildings in Croatia.

74. The project will ensure outreach to other relevant UNDP-GEF projects, including those under implementation in Serbia (2014-2020) and Kazakhstan (2015-2019). The UNDP-GEF EMIS project in Serbia has already benefited from the Croatia experience, and supports further upgrade and improvement of the EMIS.

75. The project will facilitate exchange of experience and lessons learned from EMIS use among municipalities in BiH and, more broadly, in the Western Balkan region. Through the Energy Efficiency Donor Coordination in BiH, the project will cooperate with donors and agencies in the field of energy efficiency.
76. The project will seek to disseminate its results using existing information sharing networks and forums of relevant focus in BiH, regionally and globally. The project will learn from the outputs of the GEF Sustainable Cities Integrated Approach Pilot (IAP), which seeks opportunities for improved efficiency, synergy and increased returns of investment in developing cities with initial engagement (2015-2020), with initial engagement in 23 cities in 11 countries. UNDP may invite representatives of some of these projects or the GEF Secretariat to attend the closing workshop of the project in BiH, and to deliver presentations and disseminate their own materials. The project will also contribute to relevant GEF- and UN-related publications, as appropriate.

IV. FEASIBILITY

i. Cost efficiency and effectiveness

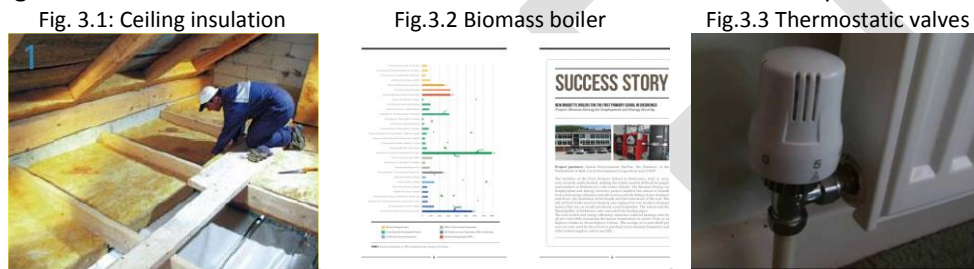
77. The project will lead to sizable and cost-effective GHG emission reductions. GHG emission analysis has been conducted based on GEF-STAP methodology “Revised Methodology for Calculating Greenhouse Gas Benefits of GEF Energy Efficiency Projects (Version 1.0)”⁷ (See Technical Annex V - Module Demo & Diff).
78. As a result of direct LCUD investment support under **Component 2**, the direct GHG emissions reductions will be approximately 400,000 tCO₂ over the LCUD investment life-cycle (20 years).
79. For the bottom-up GHG emission reduction analysis, a standardized package of technical measures in an average public building in BiH has been modeled, its cost-effectiveness assessed and GHG emission reduction impact estimated.
80. Technical measures: during project development phase over 90 public buildings across BiH have been analyzed and detailed energy audits (DEAs) conducted to derive the parameters of an average public building (2,600 m²) and identify a representative and cost-effective package of technical GHG emission reduction measures as presented in Table 3 and Figure 3. Typical measures (recommended in 70% of DEAs) include thermal cladding of outer walls, insulation of roof and ceiling. In addition, mechanical measures such as thermostatic valve installation, fuel and boiler replacement (including fuel switch to biomass and/or other appropriate renewable sources) and calorimeter installation are also suggested in 45% of DEAs. Recommendations to implement efficient lighting measures have been made in 30% of DEAs (excluded from aggregated analysis).

⁷ Available at: <https://www.thegef.org/publications/revised-methodology-calculating-greenhouse-gas-benefits-gef-energy-efficiency-projects>

Table 3 Proposed package of GHG emission reduction measures for a public building and CAPEX estimates

EE-RE Retrofit Project Costs, public building 2,600 m2		US\$
CAPEX - EE	Measure 1: Facade thermal insulation	40,470
	Measure 2: Roof and ceiling	18,981
	Measure 3: Joinery	62,073
	Measure 4: Pumps	2,565
	Measure 5: Thermostatic valves	5,130
CAPEX - RES	Measure 6: Biomass boiler	23,085
	TOTAL	152,304

Figure 3 Illustration of technical GHG emission reduction measures in public buildings



81. These measures cumulatively reduce the need for heating by 70% or by 625 MWh/year per building ($\approx 232\text{kWh/m}^2/\text{year}$). The following input data and assumptions have been used to estimate GHG emission reduction based on GEF-STAP methodology “Revised Methodology for Calculating Greenhouse Gas Benefits of GEF Energy Efficiency Projects (Version 1.0)”⁸ (Module Demo & Diff).

Table 4 Inputs and Assumption for Direct GHG Emission Calculation

Parameter	Cell	Input Data	Source
Annual Energy Saving, MWh	D29	625	DEAs
Useful life-time of investment, years	D33	20	Equipment specification
Percent of activities implemented in baseline, %	D36	10	Expert assumption
Number of projects implemented during project period, #	D39	45	Project results framework

82. In addition, the project will undertake several activities beyond individual LCUD investments that will stimulate market transformation, in particular support the establishment of the financial mechanism under Component 1 and policy measures under Component 4. Since the GEF support will only be in the form of technical assistance, there will be consequential GHG

⁸ Available at: <https://www.thegef.org/publications/revised-methodology-calculating-greenhouse-gas-benefits-gef-energy-efficiency-projects>

emission reductions of between 0.9 and 1.4 million tCO₂. These are estimated using bottom-up and top-down approaches based on the GEF methodology⁹, as summarized in Table 5.

83. For bottom-up emission estimates, the estimated direct reductions are multiplied by a replication factor – with the expectation that the volume of investments and GHG emissions reductions will increase at least by a factor of 2 over a 10-year period after project completion due to the project intervention. This is a modest replication factor according to the GEF methodology.
84. To calculate the consequential GHG emission reductions using a top-down methodology, an estimate of the total 10-year market size was made based on the following:
 - The NEAP of BiH estimates the total annual energy saving potential in the building sector at 1,900 GWh/year, which corresponds to 1,400,000 tCO₂/year or 14,000,000 tCO₂ over 10-years after project completion;
 - The impact on this market development given an estimated GEF causality factor. For this calculation, the lowest level ‘1’ causality factor is used (weak – i.e. 10%) to be conservative.
85. The overall GHG emission reductions are summarized in Table 5.

Table 5 Aggregated GHG Emission Reductions: Direct and Consequential

	2017-2022	2023-2033
Direct GHG Emission Savings (tCO ₂)	400,000	
Consequential (bottom-up) GHG Emission Savings (tCO ₂)		922,000
Consequential (top-down) GHG Emission Savings (tCO ₂)		1,400,000

86. Based upon a total GEF grant of US\$ 2.37 million, the cost per tonne of direct CO₂ emissions reduction is US\$ 6. In addition, for consequential emissions the total estimated cost per tonne of CO₂ reduced is between US \$1.7 and US \$2.6. An appropriate benchmark for the total investment cost/expected lifetime direct emission reductions is provided by data from a recent report on energy efficiency retrofits in residential buildings in the Western Balkans¹⁰. The calculated cost per tonne of lifetime emission savings for the region is in the range of US\$ 178-897/tCO₂e, depending on the type of building and the type of measures considered. Based on these calculations, the project is very cost-effective.
87. **Component 3** of the project will also contribute, directly and consequentially, to GHG emission reductions from piloting municipal green logistic schemes for waste management based on new technologies such as geographical information system (GIS) and related optimization software, as well as by supporting the policy reform (incentives for waste

⁹ ibid

¹⁰ https://www.energy-community.org/portal/page/portal/ENC_HOME/CALENDAR/Other_Meetings/2015/03_Jun_and_https://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/3284024/Guidance_Note_on_Residential_Energy_Efficiency_programs.pdf

minimization, recycling). However, in the absence of baseline data for the sector, it was not possible to estimate the expected GHG emission reductions.

88. An extensive literature review has therefore been undertaken to identify relevant benchmarks. Analysis from other cities in the region (Trabzon, Turkey; Krakow, Poland; Athens, Greece; Lisbon, Portugal), where such empirical research has been conducted, demonstrate that implementing simple and low-cost GIS-based optimization methods allows for significant reduction in fuel consumption in the municipal waste collection sector: up to 30% and by 10-15% on average, leading to corresponding reductions in GHG emissions¹¹. Estimates of GHG emission reduction from optimization of municipal waste collection system proved difficult to obtain: one relevant case study from the municipality of Bareira¹² (78,000 inhabitants) in Portugal, for example, shows that 5 tCO₂/year was reduced as a result of optimized glass waste collection and transportation system in the municipality. Assuming that similar results can be expected from pilot municipal green logistic measures for a region/municipality in BiH with similar density/population and that the scheme will cover at least three waste streams (glass, plastic, bio-waste) and 6 municipalities, the target for Component 3 has been set-up at 90 tCO₂/year or 900 tCO₂ over the life-time of the proposed improvement. The consequential GHG emission reductions from replication of the proposed green logistic scheme have been calculated at 4,500 tCO₂ (assuming replication factor of 5 in the course of 10 years project influence period). The total emission reduction from Component 3 would yield 5,400 tCO₂ and the estimated cost-effectiveness is 55 US\$/tCO₂. Given that these estimated GHG emission reductions from waste-related activities do not have the same level of precision as for other components where data and methodology are available, these estimates are provided for information purposes only and are not included in the overall project targets.

ii. **Risk Management**

89. As per standard UNDP requirements, risks (listed in Table 6) will be monitored quarterly by the Project Manager. The Project Manager will report on the status of the risks to the UNDP Country Office who will record progress in the UNDP ATLAS risk log. Risks will be reported as critical when the impact and probability are high (i.e. 5). Management responses to critical risks will also be reported to the GEF in the annual PIR.

¹¹ Gilberto Tavares, Zdena Zsigraiova, Viriato Semiao, Maria da Graça Carvalho, (2008) "A case study of fuel savings through optimisation of MSW transportation routes", *Management of Environmental Quality: An International Journal*, Vol. 19 Iss: 4, pp.444 – 454.

¹² <https://fenix.tecnico.ulisboa.pt/downloadFile/395142733883/Paper.pdf>

Table 6 Project risks

Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
The risk that a consensus between BiH entities and state level regarding the design of harmonized policies and financial support mechanism for LCUD is not reached	<i>Political</i>	Probability – 3 Impact - 2	Recognizing complex administrative and political structure in BiH, the project will work and support both entities, FBiH and RS separately at first to come up with design of the financial support mechanism for LCUD, which is appropriate for each entity. To ensure that approaches are harmonized among entities, the project will also work with MOFTER and facilitate enter-entity dialogue and exchange of relevant experiences and approaches	UNDP CO	Medium
Complex administrative and governance structure in BiH coupled with low capacities of public authorities, in particular at local level, poses risks related to the ability of relevant bodies to undertake and enforce required policy and regulatory changes, in particular as far as creation of enabling environment for private investment in low carbon public facilities is concerned.	<i>Regulatory</i>	Probability – 3 Impact - 3	<p>Design of the project strategy and its implementation structure have been informed by the need to take due account of the BiH’s administrative complexities and the need to address policy and regulatory risk. Several activities are proposed to address this risk, as follows.</p> <p>At the entity level, Component 1 will strengthen capacities of the two EFs to deliver on their mandate and facilitate investment in infrastructural LCUD projects, including developing and adopting required entity-level policy and regulations.</p> <p>At the local/municipal level, Activity 2.4 will support preparation, upgrade and adoption of municipal SECAPs as a key policy instrument which establish specific commitments at the local level for GHG emission reduction, energy saving and renewable energy application in cities. SECAPs are also important to ensure availability of local co-finance for the project as budgetary</p>	UNDP CO	High

Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
			<p>allocation at local level are directly linked to SECAP's investment priorities.</p> <p>At the national level, Component 4 will work with relevant entity authorities and MOFTER to facilitate inter-entity dialogue and harmonization and alignment of the pro-LCUD policies and regulations between the entities and Brcko district.</p> <p>The fact that the project will be directly implemented by UNDP will additionally help mitigate the risk because of UNDP's impartiality and ability to negotiate and reach consensus between the entities, as has been demonstrated in the course of the project design, which received full support of stakeholders, at both entity level and local levels across BiH.</p>		
Financial risk is related to the fact that the municipalities' and EFs' resources currently available to support LCUD investments are based on annual budget decisions, which can be subject to major changes as a result of eventual political changes and/or increased budget constraints.	<i>Financial</i>	Probability – 2 Impact - 4	The financial risks as they concern the implementation of the planned demonstration projects only are reduced by the formal co-financing letter obtained from the EFs to support the mentioned demonstration projects with at least USD 40 million over the duration of the project. The risks will also be overcome by supporting EFs to diversify and strengthen their funding base, including the work on operationalization of the polluter-pay-principle and strengthening capacities to access international funding sources.	UNDP CO	Medium
<u>Technology risk</u> that due to technical failures of the equipment and/or software used for	<i>Technology</i>	Probability – 1 Impact - 3	This risk is considered as low due to the fact that the targeted technologies are based on common and well-proven technologies and the EMIS	UNDP CO	Low

Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
EMIS and/or for the targeted follow up LCUD investments, the trust of the key stakeholders and investors on EMIS and on the promoted measures is lost.			software and the rest of the system has already been tested and operational over several years not only in Croatia, where it was designed, but also in BiH.		
<u>Environmental/ climate change risk</u> that global increase in temperature will reduce demand for energy (especially in winter) and therefore reduce the rationale for increased investments in energy efficiency.	<i>Environmental</i>	Probability – 2 Impact - 2	This risk in terms of diminishing the rationality of the project is low since the municipalities do not use energy just for heating. Another thing is that the temperature increases in the near future according to the most recent IPCC estimates even under the business as usual scenario are not expected to be so high that they would completely remove the need for heating of the building stock in BiH during the winter time. In fact, the increased variability of temperatures may make the metering and automatic control of energy use even more important from both the cost and energy saving point of view. Warmer summer months may also increase the demand for cooling. The project will also work closely with UNDP-SCCF project addressing resilience issues at municipal level to identify most critical risks and potential measures to address them within the scope of proposed project. One of the proposed measures is to support (under Component 4) review of land-use planning policies and regulations in BiH jointly with UNDP-SCCF and come up with revisions incorporating various sustainability aspects in urban land-use planning, including low-carbon and climate resilience.	UNDP CO	Low

iii. Social and environmental safeguards

90. The project will be implemented according to UNDP's environmental and social policies to ensure minimization of any environmental risks. The project has completed the standard UNDP social and environmental screening procedure (UNDP SESP attached as Annex F). The screening was undertaken to ensure that the project complies with UNDP Social and Environmental Standards (SES). The overall risk category is: Low. To ensure compliance with UNDP SES, each individual LCUD investment project will be subject to SES screening at the appraisal stage. Only projects with "low" risk will be supported.
91. Environmental Impact Assessment (EIA) is not required for the envisaged type and scale of EE investments under this project according to relevant provisions of the following laws for FBiH and RS in field of environment protection:
- Law on Environmental Protection of Federation of B&H (Official Gazette of FBiH, no. 33/03);
 - Law on Environmental Protection of Republika Srpska (Official Gazette of the Republika Srpska, no. 71/12);
 - Regulation on plants and facilities for which environmental impact assessment is obligatory and plants that can be built and activated only if they have environmental permit (Official Gazette of FBiH no. 19/04)
 - Regulation on plants and facilities that can be built and activated only if they have environmental permit (Official Gazette of the Republika Srpska" no. 7/06);
 - The relevant cantonal regulations.
92. EE-RES related projects and activities in the building sector are not subject to EIA, and do not require the issuance of environmental permits for such projects. Retrofitting of building envelopes and associated works are classified as building 'maintenance', which eliminates the need for obtaining any kind of permits. Further, in case of RES system installation with capacity below 1MW (only for combustion based) there is no need to obtain an environmental permit.
93. Environmental and social grievances will be reported to the GEF in the annual PIR.

iv. Sustainability and Scaling Up

Sustainability

94. GEF support will be fully embedded in the regular operations of the EFs, the two environmental finance institutions in BiH, thus ensuring sustainability of proposed financial mechanism for infrastructural LCUD projects. Specifically, the project's sustainability will be ensured by building the capacities of relevant partners at the local and entity level to identify, prepare and implementing infrastructural LCUD projects, as well as by creating enabling policy and regulatory framework for private investment in the sector. The key elements of the proposed framework include:
- At the local level: supporting the preparation of the Sustainable Energy and Climate Action Plans (SECAPs) and associated local climate targets. Municipalities will be

- further supported to collect and monitor data on urban energy use and GHG emissions through scaling up and institutionalizing the EMIS which covers at the moment 2,100 buildings (out of approximately 5,000) so that public finance can be used towards more targeted and sustainable investments;
- At the entity level: by supporting the design of innovative financing mechanism for LCUD investment, the project will facilitate a gradual shift from predominantly grant-based financing of LCUD towards an ESCO-based model where the need for public subsidies will be gradually reduced and their use will be limited only to cases when such support is needed to address specific structural, technical and financial barriers to private investors (as opposed to current model whereby all LCUD investments are publicly financed).
95. The project will also lay the foundation for EF's sustainable operations without GEF grant financing and beyond the project's lifetime by:
- Providing technical assistance to help design, operate and monitor performance of ESCO Fund at both EFs;
 - Supporting EFs with developing and implementing relevant policies and regulations to ensure the expansion of their revenue base (e.g. implementation and enforcement by EFs of polluter-pay-principle, waste management fees, etc.).
96. Finally, Component 4 will, *inter alia*, help to ensure that lessons learned from the project are incorporated into design of relevant national policies and initiatives.

Scaling-up

97. The project's objective is to scale-up investment in LCUD. All four project components will contribute to this objective as follows:
- Component 1 will work with EFs to help scale-up their programming budgets for LCUD by a factor of 3 to 4 (via expanding and diversifying their revenues and establishing of the new financial mechanism);
 - Components 2 and 3, respectively, will identify and demonstrate feasible LCUD investment in public buildings/utilities and waste management sectors which can be easily scaled-up and financed by EFs and the private sector;
 - Component 4 will create harmonized (at entities and local levels) policy and investment framework for LCUD thus establishing a single economic market space and rule for investors.

V. PROJECT RESULTS FRAMEWORK

<p>This project will contribute to the following Sustainable Development Goal (s): list relevant SDG goal (s) SDG 7: Affordable and clean energy - Ensure access to affordable, reliable, sustainable and modern energy for all SDG 11: Sustainable cities and communities – Make cities and human settlements inclusive, safe, resilient and sustainable SDG 13: Climate action - Take urgent action to combat climate change and its impacts</p>
<p>This project will contribute to the following country outcome included in the UNDAF/Country Programme Document: UNDAF/Country Program Outcome 5: By 2019, legal and strategic frameworks enhanced and operationalized to ensure sustainable management of natural, cultural and energy resources.</p>
<p>This project will be linked to the following output of the UNDP Strategic Plan: Output 1.5: Inclusive and sustainable solutions adopted to achieve increased energy efficiency and universal modern energy access (especially off-grid sources of renewable energy) UNDP Strategic Plan Area of Work: 2. Sustainable development pathways</p>
<p>Applicable Output Indicators from the UNDP Strategic Plan Integrated Results and Resources Framework: Indicator 1.4.2.A.1.1: Extent to which implementation of comprehensive measures - plans, strategies, policies, programmes and budgets – to achieve low-emission and climate-resilient development objectives has improved Indicator 1.5.1.A.1.1: Number of new development partnerships with funding for improved energy efficiency and/or sustainable energy solutions targeting underserved communities/groups and women.</p>

	Objective and Outcome Indicators	Baseline ¹³	Mid-term Target ¹³	End of Project Target ¹³	Assumptions ¹⁴
<p>Project Objective: to leverage investment in low-carbon urban development (LCUD) in BiH thereby promoting safer, cleaner, and healthier cities and reducing GHG emissions</p>	<p>Extent to which implementation of comprehensive measures - plans, strategies, policies, programmes and budgets – to achieve low-emission and climate-resilient development objectives has improved</p>	<p><i>N/a</i></p>	<p>Developed regulations for polluter pays principle, financial mechanism (ESCO Funding window), contractual and implementation arrangements for repayment mechanism, MRV system for waste sector developed, institutionalized and legally recognized</p>	<p>Harmonized environmental related rules and regulations developed and enacted across BiH</p>	<p>Commitment at entity and state level to regulate field of LCUD Political stability <ul style="list-style-type: none"> • Commitments and capacities in place at EFs to implement proposed financial support mechanism </p>

¹³ Baseline, mid-term and end of project levels must be expressed in the same neutral unit of analysis as the corresponding indicator.

¹⁴ Risks must be outlined in the Feasibility section of this project document.

	Objective and Outcome Indicators	Baseline ¹³	Mid-term Target ¹³	End of Project Target ¹³	Assumptions ¹⁴
	Number of new development partnerships with funding for improved energy efficiency and/or sustainable energy solutions targeting underserved communities/groups and women.	<i>N/a</i>	2 (with Environmental Funds of the entities)	2 (with Environmental funds of the entities); 4 selected municipalities for implementation of LCUD investment projects; 4 selected municipalities for implementation of green logistic schemes for municipal waste recycling	Commitments and capacities in place at EFs to implement proposed financial support mechanism Local authorities' commitment to adopt and pursue LCUD targets remains strong Local authorities' commitment to pilot green logistic scheme
	Amount of project-facilitated investment in LCUD	<i>0</i>	15 mil USD	40 mil USD	Commitments and capacities in place at EFs to implement proposed financial support mechanism
	tCO2eq direct emissions reductions (which are attributable to the project-facilitated investments in LCUD made during the project's supervised implementation period, totaled over the respective lifetime of the investments)	<i>0</i>	<i>150,000 tCO2eq</i>	<i>400,000 tCO2eq</i>	Estimation over LCUD investment lifetime (20 years) Full comfort conditions are assumed in the baseline Mid-term is 2,5 years after project start The procurement process is efficient and timely Co-financing realized
	Number of new development partnerships with funding for improved energy efficiency and/or sustainable energy solutions targeting underserved communities/groups and women	<i>0</i>	2 (with Environmental funds of the entities) for the implementation of the financial mechanism	2 (with Environmental funds of the entities); for the implementation of the financial mechanism	Commitments and capacities in place at EFs to implement proposed financial support mechanism
	Number of project beneficiaries, including % of women	<i>NA</i>	<i>6,000 (including 60% - women)</i>	<i>15,000 (including 60% - women)</i>	<ul style="list-style-type: none"> • The procurement process is efficient and timely • Co-financing realized
Component 1:	Status of performance-based financing scheme (ESCO Fund)	<i>0</i>	<i>Regulatory framework for ESCO Fund established at each entity</i>	<i>ESCO Funds established and capitalized</i>	<ul style="list-style-type: none"> • <i>Commitment and capacities at EFs to implement the proposed scheme</i>

	Objective and Outcome Indicators	Baseline ¹³	Mid-term Target ¹³	End of Project Target ¹³	Assumptions ¹⁴
Innovative Financing Mechanisms for Implementation of Low-Carbon Urban Development Concept (LCUD)	Number of staff at EFs and other stakeholders trained on the operation of ESCO Fund and other innovative financing mechanisms (including women)	0	10 (5)	40 (20)	<ul style="list-style-type: none"> • Commitment and capacities at EFs to implement the proposed scheme
	Status of MRV system	No MRV system in place	MRV system proposed and tested	MRV system is both operational in both entities	<ul style="list-style-type: none"> • Commitment and capacities at EFs to implement the proposed scheme, including MRV
Component 2: Low-carbon public buildings and utilities	Number of public facilities and utilities covered by EMIS on municipal level	2,300	1,500	3,800	<ul style="list-style-type: none"> • Local authorities' commitment to adopt EMIS remains strong
	Number of people trained in energy management and LCUD project design and implementation (including share of women)	0	500 (20%)	1,500 (30%)	<ul style="list-style-type: none"> • Learning opportunities offered by this project lead to increased investment in LCUD
	Number of infrastructural LCUD projects implemented	0	15	45	<ul style="list-style-type: none"> • The procurement process is efficient and timely
	Number of SEAPs/SECAPs updated/developed with specific LCUD targets and commitments (including number of SEAPs/SECAPs with gender component)	14 (0)	20 (5)	29 (10)	<ul style="list-style-type: none"> • Local authorities' commitment to adopt and pursue LCUD targets remains strong • Recognition of the role of women as LCUD stakeholders and beneficiaries exists among relevant local authorities
Component 3: Low-carbon waste management and logistics	Status of MRV for waste sector	No MRV for waste sector	Identified MRV modalities evaluated and MRV system proposed	MRV system established (data collection, assessment, archive and evaluation), institutionalized and legally recognized responsibility for MRV in place	<ul style="list-style-type: none"> • Relevant authorities' commitment to adopt MRV
	Number of people trained on MRV	0	20	45	<ul style="list-style-type: none"> • Relevant authorities' commitment to adopt MRV • Low staff turnover
	Status and coverage of green logistics scheme for municipal waste recycling	No examples of green logistic scheme for municipal waste recycling in BiH	Green logistic scheme for municipal waste recycling designed and piloted in 1 municipality	Green logistic scheme for municipal waste recycling piloted in 6 municipalities	<ul style="list-style-type: none"> • Local authorities' commitment to pilot green logistic scheme

	Objective and Outcome Indicators	Baseline¹³	Mid-term Target¹³	End of Project Target¹³	Assumptions¹⁴
Component 4: National and sectoral policies, institutional coordination and awareness raising on low carbon urban development	Status of relevant LCUD enabling rules and regulations	<i>N/a</i>	<i>Harmonized LCUD-enabling rules and regulations proposed</i>	<i>Harmonized LCUD-enabling rules and regulations developed and enacted across BiH</i>	<i>Commitment at entity and state level to promote LCUD Political stability</i>
	Number of people reached out to by national LCUD awareness raising campaign	<i>0</i>	<i>200,000</i>	<i>500,000</i>	<i>The procurement process is efficient and timely. Adequate support by the CO communications office.</i>

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VI. MONITORING AND EVALUATION (M&E) PLAN

98. 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.
99. Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the [UNDP POPP](#) 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 policies.
100. 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 CCM Tracking Tool) 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.

M&E Oversight and monitoring responsibilities

101. 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.
102. 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.
103. 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.

104. 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.
105. 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 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.
106. 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.
107. 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).
108. 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.
109. **Audit**: The project will be audited according to UNDP Financial Regulations and Rules and applicable audit policies on NIM implemented projects.¹⁵

¹⁵ See guidance here: <https://info.undp.org/global/popp/frm/pages/financial-management-and-execution-modalities.aspx>

Additional GEF monitoring and reporting requirements

110. 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 implementation including the formulation of detail criteria for selection of municipalities and participation in the final decision on their selection
 - 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 (for moderate and high risk projects only); 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.
111. 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.
112. GEF Project Implementation Report (PIR): The Project Manager, the UNDP Country Office, and the UNDP-GEF Regional Technical Adviser 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.
113. 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.
114. 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.

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

119. 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.

120. **Final Report:** The project’s terminal PIR along with the TE report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Table 7 Mandatory GEF M&E Requirements and M&E Budget

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ¹⁶ (US\$)		Time frame
		GEF grant	Co-financing	
Inception Workshop	UNDP Country Office	USD 5,000	USD 5,000	Within three months of project document signature
Inception Report	Project Manager and Chief Technical Advisor	USD 5,000	None	Within two months 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 by UNDP BiH	Project Manager	Per year: USD 4,000 Total: USD 20,000	Per year: <i>USD 6,000</i> Total: USD 30,000	Annually
GEF Project Implementation Report (PIR)	Project Manager and UNDP Country Office and UNDP-GEF team	None	None	Annually
Supervision missions	UNDP Country Office	None ¹⁷	None	Annually
Oversight missions	UNDP-GEF team	None ¹⁷	None	Troubleshooting as needed
Knowledge management	<i>Project Manager</i>	<i>USD 23, 700 (1% of GEF grant)</i>	<i>USD 10,000</i>	<i>On-going</i>
GEF Secretariat learning missions/site visits	Project Manager and UNDP-GEF team	None	<i>None</i>	To be determined.
Mid-term GEF Tracking Tool to be updated by the Ministry of Foreign Trade and Economic Relations	<i>Project Manager</i>	<i>USD 5,000</i>	<i>None</i>	<i>Before mid-term review mission takes place.</i>

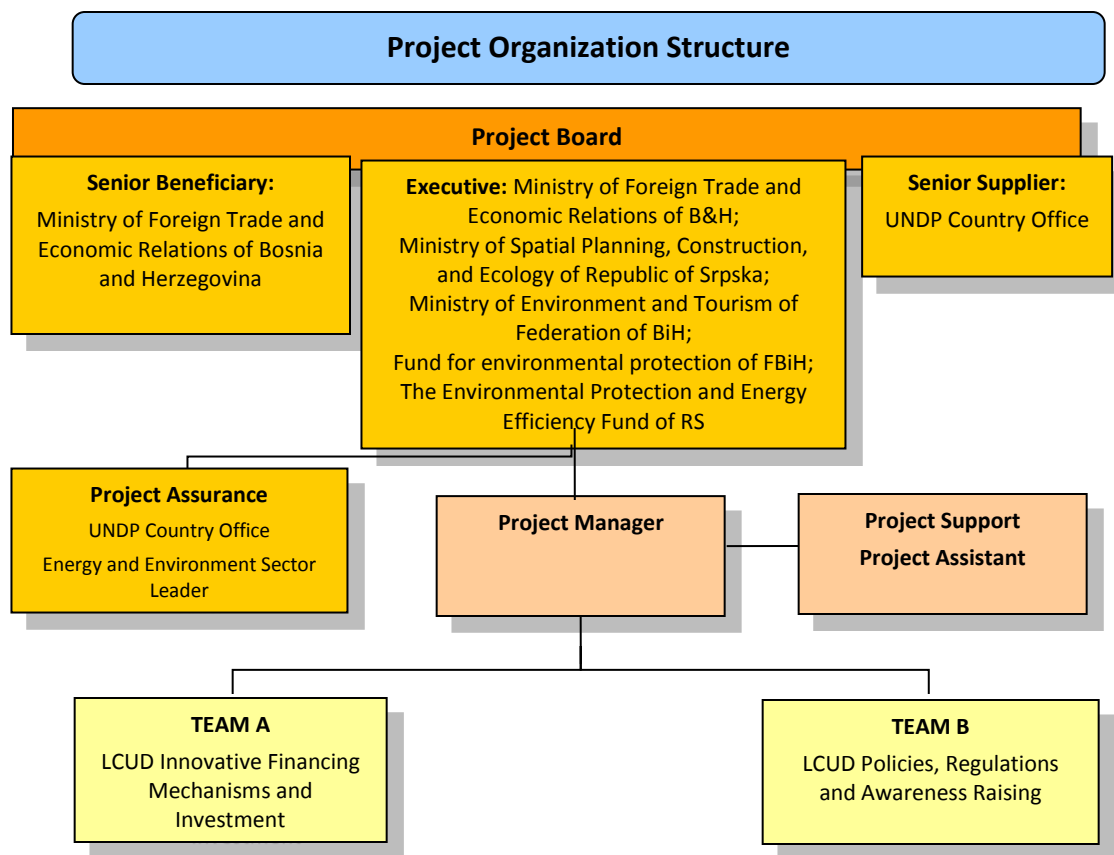
¹⁶ Excluding project team staff time and UNDP staff time and travel expenses.

¹⁷ The costs of UNDP Country Office and UNDP-GEF’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 ¹⁶ (US\$)		Time frame
		GEF grant	Co-financing	
<i>Independent Mid-term Review (MTR)</i>	<i>UNDP Country Office and Project team and UNDP-GEF team</i>	<i>USD 20,000</i>	<i>None</i>	<i>Between 2nd and 3rd PIR.</i>
Final GEF Tracking Tool to be updated by the Ministry of Foreign Trade and Economic Relations	Project Manager	USD 5,000	None	Before terminal evaluation mission takes place
Independent Terminal Evaluation (TE) included in UNDP evaluation plan	UNDP Country Office and Project team and UNDP-GEF team	USD 30,000	None	At least three months before operational closure
<i>Translation of MTR and TE reports into English</i>	<i>UNDP Country Office</i>	<i>USD 5,000</i>	<i>None</i>	<i>As required. GEF will only accept reports in English.</i>
TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses		<i>USD 118 700</i>	<i>USD 45,000</i>	

VII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

121. Roles and responsibilities of the project's governance mechanism: The project will be implemented following UNDP's Direct Implementation Modality (DIM), according to the Standard Basic Assistance Agreement between UNDP and the Government of B&H (SBAA of 7 December 1995), and the Country Program Action Plan (CPAP). The **Implementing Partner** for this project is UNDP. 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. The project organisation structure is as follows:



122. The **Project Board** (also called Project Steering Committee) is responsible for making by consensus, management decisions when guidance is required by the Project Manager, including recommendation 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 with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case a consensus cannot be reached within the Board, final decision shall rest with the UNDP Programme Manager. The terms of reference for the Project Board are contained in Annex E. The Project Board is comprised of the following institutions: Ministry of Foreign Trade and Economic Relations of B&H; Ministry of Spatial Planning, Construction, and Ecology of Republika Srpska; Ministry of Environment and Tourism of Federation of BiH; Fund for environmental protection of FBiH; The Environmental Protection and Energy Efficiency Fund of RS.

123. The **Project Manager** will run the project on a day-to-day basis on behalf of the Implementing Partner within the constraints laid down by the Board. The Project Manager function will end when the final project terminal evaluation report, and other documentation required by the GEF and UNDP, has been completed and submitted to UNDP (including operational closure of the project).

124. The **project assurance** role will be provided by the UNDP Country Office specifically Energy and Environment Sector Leader. Additional quality assurance will be provided by the UNDP Regional Technical Advisor as needed.

Governance role for project target groups

125. Having in mind the importance of responsible ministries (Ministry of Spatial Planning, Construction, and Ecology of Republika Srpska; Ministry of Environment and Tourism of Federation of BiH and Ministry of Foreign Trade and Economic Relations of B&) and EFs in LCUD, these target groups will have a direct role in governing and project management through their involvement in the Project Board.
126. Municipal authorities are important stakeholders in the process of leveraging investments for LCUD, thus making them an important target group of the Project. Therefore, authorities of selected municipalities will be involved in project governance as they have valuable local knowledge and experience related to the prescribed procedures for implementing EE measures and waste management in BiH thus increasing effective and efficient implementation of planned project activities.
127. SMEs, as delivery agents in the EE market, will contribute to the project's success through their technical knowledge and specific local experience.
128. All target groups will have a valuable role in supporting the BiH-wide advocacy campaign on low-carbon cities, through their capacity to endorse and disseminate information.
129. Agreement on intellectual property rights and use of logo on the project's deliverables: To accord proper acknowledgement to the GEF for providing 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.

Project management

130. Project unit will be based at the UN House in Sarajevo (BiH). Implementation of project activities will be fully supported by the Energy & Environment Sector Leader and Energy Environment Programme Associate, as well as other programme staff. The UNDP Country Office shall provide support services in terms of operational segments for the successful Project implementation, including: (i) human resources activities including recruitment of project personnel, issuance of project personnel contracts; (ii) undertaking procurement activities of project goods and services; (iii) finance transactions; etc. The Project manager will ensure synergy with all ongoing relevant projects within the cluster within the standard Energy and Environment cluster activities of information sharing, networking and combining activities for more effective impact.
131. The Project is fully embedded within the governance systems of BiH and, as such, directly supports its structures, functions and strategic commitments. In this context, the Project will implement its activities using the existing structures in BiH (on different governmental levels) and ensure participation of relevant government stakeholders through the Project Board. Project activities related to cooperation, training and information sharing will aim to use already established, legitimate participatory bodies, as well as existing training and cooperation platforms.

VIII. FINANCIAL PLANNING AND MANAGEMENT

132. The total cost of the project is USD 43,379,198. This is financed through a GEF grant of USD 2,370,000, with USD 3,458,571 in cash co-financing to be administered by UNDP and USD 37,550,627 in co-financing to be provided and administered by the project's implementing partners, the EFs of FBiH and RS. 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.

133. Parallel co-financing: The actual realization of project co-financing will be monitored during the mid-term review and terminal evaluation process 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 (USD)	Planned Activities/Outputs	Risks	Risk Mitigation Measures
National government - Fund for environmental protection and energy efficiency of Republic of Srpska	Grant	11,400,000	Component 1-4	Coordination issues and delay in activities may arise	Coordination ensured through participation of Fund representative at PB meetings
National Government - Environmental Fund of the Federation of Bosnia and Herzegovina	Grant	26,150,627	Component 1-4	Coordination issues and delay in activities may arise	Coordination ensured through participation of Fund representative at PB meetings
GEF Agency - UNDP	Grant	3,458,571	All project components and project management cost	Coordination among different projects' activities, including timing of implementation	Different projects' activities will be identified at the project inception phase, ensuring coordination and alignment of different outputs and synergies

134. Budget Revision and Tolerance: As per the UNDP requirements outlined in the UNDP POPP, the Project Board can 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).

135. 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.
136. Project Closure: Project closure will be conducted as per the UNDP requirements outlined in the UNDP POPP (see (<https://info.undp.org/global/popp/ppm/Pages/Closing-a-Project.aspx>)). 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.
137. Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed including the final clearance of the Terminal Evaluation Report that must be available in English, and after the final project board meeting. The Implementing Partner through a Project Board decision, will notify the UNDP Country Office when the 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.
138. 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).
139. 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 Country Office.

IX. TOTAL BUDGET AND WORK PLAN

Atlas ¹⁸ Proposal or Award ID:	00096684	Atlas Primary Output Project ID:	00100625
Atlas Proposal or Award Title:	Low Carbon Urban Development		
Atlas Business Unit	BiH10		
Atlas Primary Output Project Title	Catalyzing Environmental Finance for Low-carbon Urban Development		
UNDP-GEF PIMS No.	5646		
Implementing Partner	UNDP		

GEF Component/Atlas Activity	Responsible Party/ ¹⁹ /(Atlas Implementing Agent)	Fund ID	Donor Name	Atlas Budgetary 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)	Total (USD)	See Budget Note:
COMPONENT/ OUTCOME 1:	UNDP	62000	GEF	71200	International Consultants	\$22,000	\$18,000	\$23,000	\$22,000	\$35,000	\$120,000	1
				71300	Local Consultants	\$65,000	\$72,000	\$75,000	\$72,000	\$66,000	\$350,000	2
				71400	Contractual Services Individual	\$13,000	\$12,000	\$11,500	\$11,000	\$14,500	\$62,000	3
				71600	Travel	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$10,000	4
				72100	Contractual Services-Companies	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$250,000	5
				75700	Training Workshop and Conference		\$3,000	\$2,000	\$2,000	\$1,000	\$8,000	6
					Total Outcome 1	\$152,000	\$157,000	\$163,500	\$159,000	\$168,500	\$800,000	
COMPONENT/ OUTCOME 2:	UNDP	62000	GEF	71400	Contractual Services Individual	\$26,000	\$36,000	\$36,000	\$36,000	\$41,000	\$175,000	7
				71600	Travel	\$2,500	\$5,000	\$2,500	\$5,000	\$5,000	\$20,000	8
				72100	Contractual Services-Companies	\$10,000	\$100,000	\$170,000	\$170,000	\$100,000	\$550,000	9
				72500	Supplies	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$25,000	10
				74200	Audio Visual & Print Prod Costs	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$25,000	11

¹⁸ See separate guidance on how to enter the TBWP into Atlas

¹⁹ Only the responsible parties to be created as Atlas Implementing Agent as part of the COAs should be entered here. Sub-level responsible parties reporting directly to NIM Implementing Partners should not entered here. The rest of the components will list the IP as the responsible party.

GEF Component/Atlas Activity	Responsible Party ¹⁹ / (Atlas Implementing Agent)	Fund ID	Donor Name	Atlas Budgetary 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)	Total (USD)	See Budget Note:
				75700	Training Workshop and Conference	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$25,000	12
					Total Outcome 2	\$53,500	\$156,000	\$223,500	\$226,000	\$161,000	\$820,000	
COMPONENT/ OUTCOME 3:	UNDP	62000	GEF	71200	International Consultants	\$7,500	\$10,000				\$17,500	13
				71300	Local Consultants	\$5,000	\$15,000	\$65,000			\$85,000	14
				71400	Contractual Services Individual	\$16,000	\$16,000	\$16,000	\$16,000	\$16,000	\$80,000	15
				71600	Travel	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$12,500	16
				72100	Contractual Services- Companies		\$115,000	\$85,000			\$200,000	17
				75700	Training Workshop and Conference		\$2,500	\$2,500			\$5,000	18
					Total Outcome 3	\$31,000	\$161,000	\$171,000	\$18,500	\$18,500	\$400,000	
COMPONENT/ OUTCOME 4	UNDP	62000	GEF	71300	Local Consultants	\$20,000	\$22,000	\$20,000	\$20,000	\$30,000	\$112,000	19
				71400	Contractual Services Individual	\$16,000	\$16,000	\$16,000	\$16,000	\$6,000	\$70,000	20
				72100	Contractual Services- Companies	\$11,000	\$10,000	\$13,000	\$13,000	\$13,000	\$60,000	21
				71600	Travel		\$1,000			\$1,000	\$2,000	22
				74200	Audio Visual & Print Prod Costs		\$1,000				\$1,000	23
				75700	Training Workshop and Conference	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$5,000	24
					Total Outcome 4	\$48,000	\$51,000	\$50,000	\$50,000	\$51,000	\$250,000	
PROJECT MANAGEMENT²⁰	UNDP	62000	GEF	71400	Contractual Services Individual	\$21,000	\$21,000	\$21,000	\$21,000	\$16,000	\$100,000	
					Total Management	\$21,000	\$21,000	\$21,000	\$21,000	\$16,000	\$100,000	
Project Total						\$305,500	\$546,000	\$629,000	\$474,500	\$415,000	\$2,370,000	

²⁰ Should not exceed 5% of total project budget for FSPs and 10% for MSPs. PMU costs will be used for the following activities: Full time or part time project manager (and or coordinator); Full time or part time project administrative/finance assistant; Travel cost of the PMU project staff; Other General Operating Expenses such as rent, computer, equipment, supplies, etc. to support the PMU; UNDP Direct Project Cost if requested by Government Implementing Partner; Any other projected PMU cost as appropriate.

Budget Note number	Justification
1	Contracting of an international expert for the provision of technical advisory support on design and implementation of financial mechanism under component 1 of the Project (500 USD x 70 days); costs for mid-term review, monitoring and final evaluation (85,000 USD)
2	Contracting of a local consultant for development of regulations on polluter pays principle (350 USD x 300 days) Contracting of a local consultant for establishment of mechanism for financing the LCUD projects through ESCO financial mechanism (350 USD x 350 days) Contracting of a local consultant for elaboration of internal and external regulatory documents of Environmental Funds and development of contractual modalities between EFs and municipalities for establishment of repayment mechanisms for ESCO-support mechanisms (350 USD x 350 days)
3	Coordination of the establishment of mechanism for financing the LCUD projects through ESCO financial mechanism and development of the polluter pays mechanism
4	Travel costs of: (i) local consultants inclusive of vehicle costs, fuel and DSA; (ii) international consultants (including M&E experts, inclusive of flights, DSA and internal travel (10,000 USD)
5	Contracting company for organization of a training on ESCO mechanisms and climate and environmental finance: Contracting a company on ESCO financial mechanism; contracting of a company for implementation of ESCO financial mechanism; contracting of a company for capacity building activities; contracting a company on sources of climate and environmental finance, contracting a company on development and establishment of Measurement, Reporting and Verification (MRV) for implementation of ESCO-support mechanism, costs of administrative and organizational nature for trainings. (250USD x 1000 person-days)
6	Cost for organization of planned trainings on ESCO financial mechanisms and sources for environmental financing: 3 trainings during project implementation for representatives of relevant public institutions on ESCO financial mechanisms, 2 trainings per year on ESCO financial mechanisms for representatives of SMEs (10 trainings in total during project implementation) and 1 training per year on sources for environmental financing (5 in total during project implementation) – 8,000 USD
7	Development and coordination of application of EMIS in municipal utilities and organization of trainings on EMIS application and its use for project identification; Coordination of EMIS application trainings (350USD x 50 days) Development and coordination of implementation of LCUD investment projects (350USD x 200 days) Development and coordination of energy audits and other professional services for LCUD project design and monitoring (350USD x 250 days)
8	Travel costs of: (i) local consultants inclusive of vehicle costs, fuel and DSA; (ii) international consultants (including M&E experts, inclusive of flights, DSA and internal travel (20,000 USD)
9	Contracting company for application of EMIS in municipal utilities and organization of trainings on EMIS application and its use for project identification - contracting local experts on EMIS application in municipal utilities (200USD x 100 days) Contracting company for implementation of LCUD investment projects (200USD x 100 days) Contracting of consultants for: development of LCUD investment projects, coordinator of implementation of LCUD projects, leading engineer, civil engineer experts (200USD x 100 days) Contracting company for conducting energy audits and other professional services for LCUD project design and monitoring – contracting local experts on energy audits (200USD x 100 days) Contracting company for preparation/updating of SEAPs and/or other relevant municipal planning documents – contracting local experts on policy analysis and local experts on development/updating of strategic documents (200USD x 100 days) Infrastructure projects implementation 450 000 USD as per procedure prescribed within Activity 2.3
10	Expenses related to small procurements-office supplies (25,000 USD)
11	Contracting company for conducting the PR activities on implemented LCUD projects and organized EMIS trainings within component 2 including costs of printing of promotional materials (brochures, leaflets etc.) (25,000 USD)
12	Cost for organization of planned trainings on EMIS application: 10 per year on EMIS application for contact persons in identified public facilities (50 trainings in total during project implementation) – 25,000 USD
13	Contracting of an international expert for the provision of technical advisory support on development of Solid Waste and Recycling Database Management and support for provision of trainings on its implementation (700 USD x 25 days);
14	Contracting of a local consultant for design of Solid Waste and Recycling Database Management System and provision of trainings on its implementation (250 USD x 40 days) Contracting of a local consultant revision and updating of the waste fee systems (250 USD x 40 days)

15	Coordination of technical advisory support on development of Solid Waste and Recycling Database Management Coordination of the revision and updating of the waste fee systems and of design and implementation of municipal green logistic schemes for waste recycling
16	Travel costs of: (i) local consultants inclusive of vehicle costs, fuel and DSA; (ii) international consultants (including M&E experts, inclusive of flights, DSA and internal travel (12,500 USD)
17	Contracting company for design and implementation of municipal green logistic schemes for waste recycling Contracting of consultants for: design of green logistic schemes for waste recycling, coordinator of implementation of green logistic schemes, technical expert, leading engineer, civil engineer experts (200 USD x 50 days) Contracting of a company for IT waste management system development (250USD x 760 days)
18	Cost for organization of planned trainings on Solid Waste and Recycling Database Management System: 1 training per year (trainings in total during project implementation) - 5,000 USD
19	Contracting of a local consultant on analysis of environmental legislative and institutional frameworks within BiH (400 USD x 280 days)
20	Coordination of the analysis of environmental legislative and institutional frameworks within BiH; Coordination of the national raising awareness campaign
21	Contracting company for conducting national awareness raising campaign on LCUD – contracting of consultants for: development of campaign design (200 USD x 50 days), coordination of raising awareness activities (200 USD x 50 days), public relations/communications (200 USD x 50 days), costs of administrative and organizational nature for events and design of promotional materials/publications (30,000 USD)
22	Travel costs of: (i) local consultants inclusive of vehicle costs, fuel and DSA; (ii) international consultants (including M&E experts, inclusive of flights, DSA and internal travel (2,000 USD)
23	Contracting company for printing of promotional materials for awareness-raising activities (1,000 USD)
24	Cost for organization of multi-stakeholder consultation, 1 meeting per year (5 meetings in total during project implementation) – 5,000 USD
25	Cost of Project Assistant for the full project duration

Summary of Funds: ²¹

Source	Amount Year 1	Amount Year 2	Amount Year 3	Amount Year 4	Amount Year 5	Total
GEF	305,500	546,000	629,000	474,500	415,000	2,370,000
UNDP	691,714	691,714	691,714	691,714	691,714	3,458,571
National government - Fund for environmental protection and energy efficiency of Republic of Srpska	2,280,000	2,280,000	2,280,000	2,280,000	2,280,000	11,400,000
National Government -Environmental Fund of the Federation of Bosnia and Herzegovina	5,230,125	5,230,125	5,230,125	5,230,125	5,230,125	26,150,625
TOTAL	8,507,339	8,747,839	8,830,839	8,676,339	8,616,839	43,379,196

²¹ Summary table should include all financing of all kinds: GEF financing, co-financing, cash, in-kind, etc.

X. LEGAL CONTEXT

140. 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 Standard Basic Assistance Agreement (SBAA); as such all provisions of the CPAP apply to this document. All references in the SBAA to “Executing Agency” shall be deemed to refer to “Implementing Partner”, as such term is defined and used in the CPAP and this document.
141. UNDP as the Implementing Partner shall comply with the policies, procedures and practices of the United Nations safety and security management system.
142. UNDP will undertake all reasonable efforts to ensure that none of the project 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 this Project Document.
143. 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.

XI. MANDATORY ANNEXES

Annex A: Multi-year workplan

Annex B: Monitoring plan

Annex C: Evaluation plan

Annex D: GEF Tracking Tool at baseline (see separate document)

Annex E: Terms of Reference for Project Manager, Chief Technical Advisor, Project Assistant, Project Board, Financial mechanism consultant

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

Annex G: Environmental and Social Management Plans (ESMP) for moderate and high risk projects only

Annex H: UNDP Project Quality Assurance Report

Annex I: UNDP Risk Log

Annex J: Results of the capacity assessment of the project implementing partner and HACT micro assessment

Annex K: Additional agreements and letters of co-financing

Annex L: Gender assessment and action plan

Annex A: Multi-year work plan

Task/ Output	Responsible Party	Year 1	Year 2	Year 3	Year 4	Year 5
1: Innovative Financing Mechanism for Implementation of Low-Carbon Urban Development Concept						
Output 1.1: Regulations for polluter pays principle developed	UNDP					
Output 1.2: Financial mechanism (ESCO Funding window) established at EFs and capitalized with EF's own finance	UNDP					
Output 1.3: At least 40 staff of relevant institutions gaining first-hand experience (through trainings) on innovative finance options for LCUD and at least 100 representatives of relevant SMEs informed about the ESCO-support mechanism	UNDP					
Output 1.4: Contractual and implementation arrangements for repayment mechanism established	UNDP					
Output 1.5: Measurement, Reporting and Verification (MRV) for implementation of ESCO-support mechanism established	UNDP					
2: Low-carbon public facilities and utilities						
Output 2.1: EMIS expanded to cover all types of public facilities and resources use in public utilities (1,500 buildings)	UNDP					
Output 2.2: Municipal staff trained and equipped to apply EMIS (1,500 end-users trained)	UNDP					
Output 2.3: 45 LCUD projects in public facilities and utilities implemented	UNDP					
<i>Identification of LCUD investment projects based on ESCO model</i>	UNDP					
<i>Preparation of identified LCUD investment projects based on ESCO model</i>	UNDP					
<i>Implementation of identified LCUD investment projects based on ESCO model</i>	UNDP					
Output 2.4: At least 15 SEAPs and/other relevant municipal planning documents prepared to scale-up piloted investment	UNDP					
3: Low-carbon waste management and logistics						
Output 3.1: MRV system for waste sector developed, institutionalized and legally recognized	UNDP					

Task/ Output	Responsible Party	Year 1	Year 2	Year 3	Year 4	Year 5
Output 3.2: Municipal managers (45) and Environmental Fund and environmental Ministry's staff (10) trained and equipped with skills and tools to improve and monitor the waste management system	UNDP					
Output 3.3: Reformed waste fee system introduced	UNDP					
Output 3.4 Green logistic scheme for municipal waste recycling designed and piloted in 4 municipalities	UNDP					
4: National and sector policies, institutional coordination and awareness raising on LCUD						
Output 4.1: Harmonized environmental related rules and regulations developed and enacted across BiH	UNDP					
Output 4.2: National awareness-raising campaign conducted reaching out to at least 500,000 urban population	UNDP					
<i>Organization of 2 promotional campaigns in at least 2 BiH selected cities</i>	UNDP					
<i>Development of promotional materials</i>	UNDP					
<i>Project-based social networking</i>	UNDP					
Project management	UNDP					

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: to leverage investment in low-carbon urban development (LCUD) in BiH thereby promoting safer, cleaner, and healthier cities and reducing GHG emissions	Indicator 1	Amount of project-facilitated investment in LCUD	EFs of FBiH and RS will provide data on the amount of investment in LCUD	Annually Reported in DO tab of the GEF PIR	Project Manager and Project Responsible Partners (EFs)	EFs' Annual Reports	Commitments and capacities in place at EFs to monitor implementation of the proposed financial mechanism for LCUD
	Indicator 2	tCO ₂ eq direct emissions reductions (which are attributable to the project-facilitated investments in LCUD made during the project's supervised implementation period, totaled over the respective lifetime of the investments)	GHG emission reductions will be estimated based on GEF-STAP "Revised Methodology for Calculating Greenhouse Gas Benefits of GEF Energy Efficiency Projects" Input data will be collected from EMIS (before and after project implementation)	Annually Reported in DO tab of the GEF PIR	Project Manager	Project progress report	Capacities in place to sustain EMIS implementation
	Indicator 3	Number of new development partnerships with funding for improved energy efficiency	EFs will provide report on the status of implementation of the proposed financial mechanism	Annually	Project Responsible Partners (EFs)	EFs' Annual Reports	Commitments and capacities in place at EFs to monitor implementation of the proposed financial mechanism for LCUD

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
	Indicator 4	Number of project beneficiaries, including % of women	EMIS (EMIS data-base contains number of users for each public building/facility, including gender breakdown)	Annually Reported in DO tab of the GEF PIR	Project Manager	Project progress report	Capacities in place to sustain EMIS implementation
Component/ Outcome 1 Innovative Financing Mechanism for LCUD	Indicator 1	Status of financial mechanism (ESCO Fund)	EFs will provide report on the status of implementation of the proposed financial mechanism	Annually	Project Responsible Partners (EFs)	EFs' Annual Reports	Commitments and capacities in place at EFs to monitor implementation of the proposed financial mechanism for LCUD
	Indicator 2	Number of staff at EFs and other stakeholders trained on the operation of ESCO Fund and other innovative financing mechanisms (including % women)	Project team based on records of the conducted training	Annually	Project Manager	Reports from training workshops	Inclusion in the TOR of the project team members responsible for training organization responsibilities regarding collection of required data (number of participants with breakdown by gender)
	Indicator 3	Status of MRV system	EFs will provide report on the status of implementation of the proposed financial mechanism, including MRV	Annually	Project Responsible Partners (EFs)	EFs' Annual Reports	Commitments and capacities in place at EFs to monitor implementation of the proposed financial mechanism for LCUD and maintain MRV
Component/ Outcome 2	Indicator 1	Number of public building and other public	EMIS	Annually	Project Manager	Annual Project Report	Capacities in place to sustain EMIS implementation

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
Low-carbon public buildings and utilities		facilities/utilities covered by EMIS					
	Indicator 2	Number of people trained in energy management and LCUD project design and implementation (including share of women)	Project team based on records of the conducted training	Annually	Project Manager	Reports from training workshops	Inclusion in the TOR of the project team members responsible for training organization responsibilities regarding collection of required data (number of participants with breakdown by gender)
	Indicator 3	Number of LCUD projects implemented	Project team	Annually	Project Manager	Annual Project Report	Responsibilities for data collection are clearly assigned within project team
	Indicator 4	Number of SEAPs/SECAPs updated/developed with specific LCUD targets and commitments (including number of SEAPs/SECAPs with gender component)	Municipal authorities – information on the status of SEAPs/SECAPs to be collected by Project team	Annually	Project Manager	Covenant Of Mayors SEAPs data-base: http://www.covenantofmayors.eu/actions/sustainable-energy-action-plans_en.html	Municipal authorities remain committed to collaboration
Component/ Outcome 3	Indicator 1	<i>Status of MRV for municipal waste sector</i>	EFs will provide report on the status of MRV	Annually	Project Responsible Partners (EFs)	EFs' Annual Reports	Commitments and capacities in place at EFs to implement municipal waste sector MRV

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
Low-carbon waste management and logistics	Indicator 2	<i>Number of people trained on MRV</i>	Project team based on records of the conducted training	Annually	Project Manager	Reports from training workshops	Inclusion in the TOR of the project team members responsible for training organization responsibilities regarding collection of required data (number of participants with breakdown by gender)
	Indicator 3	<i>Status and coverage of green logistics scheme for municipal waste recycling</i>	Municipal authorities and/or municipal waste management companies – information on the status and coverage of green logistics scheme	Annually	Project Manager	Annual Progress Report	Municipal authorities and waste management companies remain committed to collaboration
Component/ Outcome 4	Indicator 1	<i>Status of relevant LCUD enabling rules and regulations</i>	Project Manager	Annually	Project Manager	Official Gazettes of BiH, FBiH and RS	Entity and national-level authorities are committed to collaboration
National/entity-level policies, institutional coordination and awareness-raising for LCUD	Indicator 2	<i>Number of people reached out by national LCUD awareness raising campaign (including share of women)</i>	Project Manager	In the end of the campaign	Project Manager	Report from campaign implementation	Inclusion in the TOR of the company specific provisions and tasks related to data collection and monitoring, including gender disaggregated data

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
Mid-term GEF Tracking Tool	N/A	N/A	baseline GEF Tracking Tool included in Annex 4	After 2 nd PIR submitted to GEF	Project team: international CTA and local consultants	USD 5,000	All mandatory indicators from the GEF CCM Tracking tool have been incorporated in the project result framework. Assuming that M&E system in place to collect data and report on project result framework, it should be sufficient to report on GEF TT data
Final GEF Tracking Tool	N/A	N/A	baseline GEF Tracking Tool included in Annex	After final PIR submitted to GEF	Project team: international CTA and local consultants	USD 5,000	All mandatory indicators from the GEF CCM Tracking tool have been incorporated in the project result framework. Assuming that M&E system in place to collect data and report on project result framework, it should be sufficient to report on GEF TT data
Mid-term Review (if FSP project only)	N/A	N/A	Independent evaluators	Submitted to GEF same year as 3 rd PIR		USD 30,000	Include translation costs and travel costs as necessary
Total monitoring budget						USD 40,000	

Annex C: Evaluation Plan

Evaluation Title	Planned start date Month/year	Planned end date Month/year	Included in the Country Office Evaluation Plan	Management Response	Budget for consultants	Other budget (i.e. travel, site visits etc...)	Budget for translation
Terminal Evaluation	After terminal PIR	To be submitted to GEF within three months of operational closure	Mandatory	Mandatory	USD 30,000	N/a	N/a
Total evaluation budget					USD 30,000		

Annex D: GEF Tracking Tool at baseline

Provided as a separate document – see Excel tool

Annex E. Terms of References

Terms of reference are provided below for Project manager, Chief technical advisor, Project assistant, Project board and Financial mechanism development consultant

Project Manager

Summary of key functions:

In consultation with the Project Board, the Project Manager (PM) is responsible for day-to-day management, coordination and supervision of the implementation of the Project. Specifically, his\her responsibilities are but not limited to the following:

1. Supervises and ensures the timely implementation of the project relevant activities;
2. Prepares a detailed work plan for the project, manages the procurement and the project budget to assure timely involvement of local and international experts, organisation of training and public outreach, purchase of required equipment etc. in accordance with UNDP rules and procedures;
3. Assures coordination among project activities;
4. Liaises with the relevant ministries, national and international research institutes, NGOs, and other relevant institutions in order to gather and disseminate information relevant to the project and organize realisation of project activities;
5. Supervises and coordinates the contracts of the experts working for the project;
6. Submission of annual Project Implementation Reviews and other required progress reports (such QPRs) to the PSC and the UNDP in accordance with the section "Monitoring and Evaluation" of the Project Document;
7. As applicable, communicating with the project's international partners and attracting additional financing in order to fulfil the project objectives; and
8. Ensuring otherwise successful completion of the project in accordance with the stated outcomes and performance indicators summarized in the project's results framework and within the planned schedule and budget.

Required Skills and Experience:

- Advanced degree in environment/development/management related studies or other related disciplines;
- Ten years experience in managing projects, including demonstrated capacity to actively explore new, innovative implementation and financing mechanisms to achieve the project objective;
- Good understanding of environment/development issues in BiH;
- Demonstrated experience in working with government, donors and the United Nations system;
- 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;
- Familiarity and prior experience with UNDP and GEF requirements and procedures are considered as an asset;
- Fluency in English and local languages.

Chief Technical Advisor

Summary of key functions:

In consultation with the Project Manager (PM) specifically, his\her responsibilities consist of the following:

1. Provides technical input in development of policies, regulations and bylaws;
2. Takes part in development of technical and non-technical guidance documents for all studies and assessment undertaken as part of the project;
3. Support and oversees the design of an innovative financing mechanism
4. Undertake an assessment of the monitoring network requirements and provides technical assistance;
5. Provides technical support to municipalities to prepare and implement LCUD projects in public buildings and utilities; building municipalities capacity
6. Takes part in design and implementation of MRV system and Solid Waste and Recycling Database Management System (SWRDMS);
7. Provides technical input in waste collection route optimization and introduction of waste fee system
8. Takes a lead in selection of structural and non-structural measures;
9. Oversees implementation of non-structural interventions.
10. Monitor field activities implementation
11. Provides support in organization of external evaluation of the project;
12. Ensures efficiency in the provision of support to local stakeholders at municipal level;
13. Ensures that all project-related issues and risks are identified and reported in a timely manner and suggests corrective measures;
14. Co-ordinates the work of the Project Team, individual consultants and contracted companies;
15. Organises and implements trainings (through tailored-made seminars and on-the-job) to employees of EFs' and relevant ministries to implement ESCO fund mechanism, along with organization of information workshops for municipalities and SMEs about the mechanisms of innovative financing and on the roles and responsibilities of all parties involved.
16. Organises and implements trainings (through on-the-job training and advisory service) to the employees of EFs and relevant ministries regarding various sources of climate and environmental finance and potential sources for additional capitalization of EFs and diversification of their revenues
17. Assist PM in development of annual work plans based on the multi-year work plan included in Annex A,
18. including annual output targets to support the efficient implementation of the project.
19. Identify capacity needs of municipal departments/companies and provide necessary trainings;
20. Provides support to mainstreaming gender equality in the project implementation;

Required Skills and Experience:

- Degree in environmental science or engineering;
- Minimum ten years of professional experience in energy and environment field;
- Experience of the technical work in energy risk management and/or waste management;
- Experience of the development of low carbon interventions;
- Good analytical and problem-solving skills;
- Ability and demonstrated success to work in a team;
- Good communication skills and competence in handling project's external relations at all levels;

Project Assistant

Summary of key functions:

The Project Assistant will work under the direct supervision of the Project Manager and provide assistance to project implementation, the organization of training activities and financial management and reporting.

The Project Assistant will be responsible for the following duties:

1. Manage day-to-day Project operations, particularly with respect to the provision of technical services and support;
2. Assist the Project Manager in the implementation of technical and operational activities;
3. Takes responsibility for logistics and administrative support of project implementation, including administrative management of the project budget, required procurement support, etc.
4. Maintains up to date business and financial documentation, in accordance with UNDP and other project reporting requirements;
5. Organizes meetings, business correspondence and other communications with the project partners;
6. Ensures 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;
7. Supporting the project manager in managing contracts, in organizing correspondence and in ensuring effective implementation of the project otherwise;
8. Maintain the Project's files and supporting documentation for payments;
9. Undertake other administrative/ financial duties as requested by the Project Coordinator;
10. Other duties which may be required.

Required Skills and Experience:

- Secondary education; University degree is considered as an asset level;
- Demonstrated experience and success of work in a similar position;
- Good administration and interpersonal skills;
- Ability to work effectively under pressure;
- Good computer skills;
- Fluency in English.

Project Board

- A Project Board will be established at the inception of the project to monitor project progress, to guide project implementation and to support the project in achieving its listed outputs and outcomes.
- It will be co-chaired by UNDP and BiH UNFCCC focal point. Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina, as the key governmental institution, will ensure that other governmental agencies are duly consulted and involved as per their mandate. Ministry of Spatial Planning, Construction, and Ecology of Republic of Srpska; Ministry of Environment and Tourism of Federation of BiH; Fund for environmental protection of FBiH; The Environmental Protection and Energy Efficiency Fund of RS; Ministry of Foreign Trade and Economic Relations of B&H will be active members of the Project Board.
- Other participants can be invited into the Board meetings at the decision of the Board.
- The Board will meet regularly (at least twice a year) to review project progress, discuss and agree on project work plans. One of the key tasks of the Board will be to ensure coordination and synchronization of central

and local-level activities supported by the project. In this respect, the Board will serve as a platform for key project stakeholders and beneficiaries to regularly get together and design a joint strategy of work on the project.

- The final list of the Project Board members will be completed at the outset of project operations and presented in the Inception Report by taking into account the envisaged role of different parties in the Board. The Project Manager will participate as a non-voting member in the Board meetings and will also be responsible for compiling a summary report of the discussions and conclusions of each meeting.
- The day-to-day management of the project will be carried out by a Project Manager under the overall guidance of the Project Board.

Consultant for the Development of the Financial mechanism

Background:

The objective of the project “Catalyzing Environmental Finance for Low-carbon Urban Development” is to leverage investment for transformational shift towards low-carbon urban development in Bosnia and Herzegovina thereby promoting safer, cleaner, and healthier cities and reducing urban GHG emissions. To enable this transformational shift, the project will facilitate implementation of technically and economically feasible low-carbon solutions in key urban sectors, and promote their wider uptake by municipalities and private sector via dedicated financial mechanism established within the national environmental finance framework. The project will also accelerate the implementation of a policy and regulatory framework supportive of low-carbon investment in cities.

One of the project outputs include establishment of the Financial mechanism (ESCO Funding window) established at BiH’s Environmental funds (EF’s) and capitalized with EF’s own finance including defining the process and criteria for the financial mechanism for LCUD (ESCO funding window within EFs).

Objective and functions:

The objective of the consultancy will be to develop a detailed financial mechanism for the low-carbon urban development projects which represent an Energy Service Company (ESCO) funding window within Environmental Funds of the Federation of Bosnia and Herzegovina and Republic of Srpska.

The output should address all of the aspects related to development of ESCO business model processes (performance-based), eligibility criteria for grants, monitoring and verification procedures for proving savings achieved, and procurement methods with criteria for awarding grants and revolving loans. The end result of the consultancy should include a clear formula and algorithm for awarding projects with grant/loans from EFs (including appropriate legal and institutional arrangements).

The mechanism should support energy efficiency (EE) retrofit of public facilities, EE public lightning and water saving measures according to NEEAP priorities and in line with municipalities’ SEAPs. Recognizing complex administrative and political structure in BiH, the consultancy will support both EFs separately at first to come up with design of the financial support mechanism for LCUD, which is appropriate for each BiH entity. To ensure that approaches are harmonized among entities, the project will also work with MOFTER and facilitate inter-entity dialogue and exchange of relevant experiences and approaches.

The tasks encompassed will include the development of the ESCO business model processes (performance-based), eligibility criteria for grants, monitoring and verification procedures for proving savings achieved, and procurement methods with criteria for awarding grants and revolving loans. Capitalization of the ESCO funding window will be done from the EFs’ own resources

The preparation of the outputs of the consultancy will be organized in cooperation and provision of support and guidance by the Project team.

The task will be based on: (i) a desk-review of available literature, (ii) consultations with relevant stakeholders (i.e. representatives of Environmental Funds of the Federation of Bosnia and Herzegovina and Republic of Srpska), and

(iii) the considerations and insights of the service provider’s team. The service provider will document consultations with stakeholders and support interaction with those stakeholders as partners to the financial instrument.

The report on financial instruments should have the following sections: (1) executive summary, (2) justification and elaboration of financial instrument selection, (3) detail description of procedures related to criteria for selection of eligible projects as well as monitoring and verification procedures and procurement methods with criteria for awarding grants and revolving loans; preferably presented in form of roadmap, (4) recommendations for next steps.

Competencies

- Corporate Competencies:
 - Demonstrates commitment to UNDP’s mission, vision and values;
 - Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability
- Core Competencies:
 - Demonstrating/safeguarding ethics and integrity;
 - Demonstrate corporate knowledge and sound judgment;
 - Self-development, initiative-taking;
 - Acting as a team player and facilitating team work;
 - Facilitating and encouraging open communication in the team, communicating effectively;
 - Creating synergies through self-control;
 - Managing conflict;
 - Learning and sharing knowledge and encourage the learning of others. Promoting learning and knowledge management/sharing is the responsibility of each staff member;
 - Informed and transparent decision-making.

Qualifications Requirements

- Education:
 - Bachelor’s or equivalent degree in finance, economics, environment, or other related field. Master’s or equivalent degrees will be at an advantage
- Experience:
 - At least 5 years of professional experience focused on finance.
 - Experience with preparation and implementation of public financial instruments to promote private sector investment in low-carbon energy. Specific experience with UNDP and GEF projects will be an advantage
 - Proven experience with financial modelling
 - Experience working in developing country contexts preferred, particularly those related to the Western Balkan region
 - Experience working with multilateral organizations and the UN system preferred
- Language Requirements:
 - Knowledge of MS Word, Excel and email communication software
- Others:
 - Fluency in English required. Excellent drafting skills required
 - Familiarity with small PV and wind technologies and engineering economics
 - Excellent written and verbal communication skills
 - Strong organizational skills, ability to track and juggle multiple tasks
 - Good consultation and collaboration skills

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

The completed template, which constitutes the Social and Environmental Screening Report, must be included as an annex to the Project Document. Please refer to the [Social and Environmental Screening Procedure](#) and [Toolkit](#) for guidance on how to answer the 6 questions.

Project Information

Project Information	
1. Project Title	Catalyzing Environmental Finance for Low-Carbon Urban Development
2. Project Number	PIMS 5646
3. Location (Global/Region/Country)	Bosnia and Herzegovina (BiH)

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the Project mainstreams the human-rights based approach

The objective of the proposed UNDP-GEF project is to promote low-carbon urban development, in particular energy and water efficiency and sustainable transport/logistics for urban waste management in BiH cities and towns in alignment with the Government’s national Low-emission development strategy. The project reinforces decentralization of governance responsibilities to the local level, empowers local communities and municipalities to manage their resources, and strengthens the capacity of local stakeholders to build partnerships and secure financing for urban low-carbon development (LCUD).

Briefly describe in the space below how the Project is likely to improve gender equality and women’s empowerment

Gender issues has been addressed directly in the following ways throughout the project preparation process:

- 1) Project preparation activities included a baseline analysis of women’s participation in municipal management, especially in public institutions (hospitals and schools);
- 2) The project applied a gender marker (2) as per UNDP guidance;
- 3) The project incorporated gender issues in the project results framework, including gender-sensitive indicators and targets;
- 4) The project will monitor the share of women and men as direct beneficiaries; and

5) An analysis of women’s inclusion in project activities will be included in both the mid-term evaluation and the terminal evaluation of the project and will be explicitly stated in the terms of reference for those evaluations

Briefly describe in the space below how the Project mainstreams environmental sustainability

The proposed project is aimed at promoting environmental sustainability in urban context with a particular focus on sustainable use of energy and water resources and sustainable logistics for waste management. All proposed outcomes and activities of the project will contribute to this objective.

Part B. Identifying and Managing Social and Environmental Risks




<p>QUESTION 2: What are the Potential Social and Environmental Risks? <i>Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any “Yes” responses). If no risks have been identified in Attachment 1 then note “No Risks Identified” and skip to Question 4 and Select “Low Risk”. Questions 5 and 6 not required for Low Risk Projects.</i></p>	<p>QUESTION 3: What is the level of significance of the potential social and environmental risks? <i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6</i></p>			<p>QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?</p>
<p>Risk Description</p>	<p>Impact and Probability (1-5)</p>	<p>Significance (Low, Moderate, High)</p>	<p>Comments</p>	<p>Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.</p>
<p>Risk 1: Implementation of LCUD projects, such as retrofits of public buildings, may involve safety risks to workers, lead to generation of hazardous waste (asbestos or mercury containing bulbs) and also disturb operations of public facilities (schools, kindergartens, etc)</p>	<p>I = 2 P = 2</p>	<p>Low</p>	<p>The project interventions do not pose any significant social and environmental risks. According to the national legislation, EIA is not required for the types of activities envisaged by the project.</p>	<p>The project will entail interventions where potential risk that retrofit works and failure of structural elements form the building retrofits may pose safety risks. The project will mitigate this risk by working with registered and skilled contractors and supervising the building retrofits closely, in accordance with national regulations. UNDP BiH has extensive experience with implementing similar investment (over 50 buildings have been retrofitted in the past) within the framework of the Green Economic Development project and has relevant</p>

				Standard Operating Procedures (SOP) in place to ensure safety and also minimum disturbance to occupants.
Risk 2: Project may face several climate-related risks related to changing climatic characteristic resulting in higher/lower energy demand, risks of increased flooding, water availability, increased frequency and intensity of heat waves, etc	I = 2 P = 2	Low	Climate risks to project implementation and sustainability.	<p>The climate-related risks have been assessed at PPG stage. Climate change has several potential implications for the project. First, global increase in temperature will reduce demand for energy (especially in winter) and therefore reduce the rationale for increased investments in energy-efficiency. This risk in terms of diminishing the rationality of the project is low due to the fact that the municipalities do not use energy just for heating. Another thing is that the temperature increases in the near future according to the most recent IPCC estimates even under the business as usual scenario are not expected to be so high that they would completely remove the need for heating of the building stock in BiH during the winter time. In fact, the increased variability of temperatures may make the metering and automatic control of energy use even more important from both the cost and energy saving point of view. Warmer summer months may also increase the demand for cooling.</p> <p>The project will work closely with UNDP-SCCF project addressing resilience issues at municipal level to identify most critical risks and potential measures to address them within the scope of proposed project.</p> <p>For example, in the areas where the public buildings and infrastructure were affected by floods or are at risk the proposed LCUD projects will be aligned with the “Build Back Better” principle and will include flood-resistant building materials and biomass fuel switch projects, all of which can strengthen resilience through improved resistance to floods and increased reliability and affordability of energy sources.</p>

				At the policy level, one of the proposed measures is to support review of land-use planning policies and regulations in BiH jointly with UNDP-SCCF and come up with revisions incorporating various sustainability aspects in urban land-use planning, including low-carbon and climate resilience.
	QUESTION 4: What is the overall Project risk categorization?			
	Select one (see SESP for guidance)		Comments	
	<i>Low Risk</i>	<input checked="" type="checkbox"/>		
	<i>Moderate Risk</i>	<input type="checkbox"/>		
	<i>High Risk</i>	<input type="checkbox"/>		
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?			
	Check all that apply		Comments	
	<i>Principle 1: Human Rights</i>	<input type="checkbox"/>		
	<i>Principle 2: Gender Equality and Women's Empowerment</i>	<input type="checkbox"/>		
	<i>1. Biodiversity Conservation and Natural Resource Management</i>	<input type="checkbox"/>		
	<i>2. Climate Change Mitigation and Adaptation</i>	<input checked="" type="checkbox"/>	Conduct site-specific climate risk assessment and ensure key risks are taken into account in the design of LCUD projects	
	<i>3. Community Health, Safety and Working Conditions</i>	<input checked="" type="checkbox"/>	The project will entail interventions where potential risk that retrofit works and failure of structural elements form the building retrofits may pose safety risks. The project will however mitigate this risk by working with registered and skilled contractors and supervising the building retrofits closely, in accordance to national regulations	
	<i>4. Cultural Heritage</i>	<input type="checkbox"/>		
	<i>5. Displacement and Resettlement</i>	<input type="checkbox"/>		
	<i>6. Indigenous Peoples</i>	<input type="checkbox"/>		

	7. Pollution Prevention and Resource Efficiency	X	The project will set up measures to deal with the generation of waste from building retrofits, by including specific terms regarding the (environmental friendly) waste disposal in the contractual agreement with building contractors.
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Final Sign Off

<i>Signature</i>	<i>Date</i>	<i>Description</i>
QA Assessor Alisa Grabus, EE Sector Associate 		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver Sanjin Avdic, EE Sector Leader 		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair 		UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks		
Principles 1: Human Rights		Answer (Yes/No)
1.	Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2.	Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? ²²	No
3.	Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
4.	Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	No
5.	Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	No
6.	Is there a risk that rights-holders do not have the capacity to claim their rights?	No
7.	Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
8.	Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Principle 2: Gender Equality and Women’s Empowerment		
1.	Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2.	Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
3.	Have women’s groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
4.	Would the Project potentially limit women’s ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i>	No
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?	No

²² Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to “women and men” or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

	<i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	
1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3	Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4	Would Project activities pose risks to endangered species?	No
1.5	Would the Project pose a risk of introducing invasive alien species?	No
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	No
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? <i>For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.</i>	No
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant ²³ greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	Yes
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	No
Standard 3: Community Health, Safety and Working Conditions		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	Yes
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No

²³ In regards to CO₂, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	No
3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	Yes
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	No
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	Is there a risk that the Project would lead to forced evictions? ²⁴	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)?	No

²⁴ Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

	<i>If the answer to the screening question 6.3 is “yes” the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.</i>	
6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.7	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.8	Would the Project potentially affect the physical and cultural survival of indigenous peoples?	No
6.9	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	Yes
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol</i>	No
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No

Annex G: Environmental and Social Management Plans (ESMP) for moderate and high risk projects only

Not applicable

Annex H: UNDP Project Quality Assurance Report

To be completed by the UNDP CO after GEF CEO endorsement prior to issuance of Delegation of Authority.

Annex I: UNDP Risk Log

Annex J: Results of the capacity assessment of the project implementing partner and HACT micro assessment

Not applicable

Annex K: Letters of co-financing



March 27, 2017

Dear Mrs. Adriana Dinu,

The UNDP Country Office (CO) Bosnia and Herzegovina would like to express our full support to the GEF Project Proposal "Catalyzing Environmental Finance for Low-carbon Urban Development".

With this Letter we would like to confirm our commitment to co-finance the aforementioned project. Our contribution in the amount of US\$ 3,458,571 will be over the period of 2017 - 2022 to co-finance activities under all four components of the Project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Sezin Sinanoglu".

Sezin Sinanoglu
UNDP Resident Representative
in Bosnia and Herzegovina

To:

Mrs. Adriana Dinu

UNDP-GEF Executive Coordinator

United Nations Development Programme, Bosnia and Herzegovina, Zmajev od Bosne b.b., 71000 Sarajevo
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Broj: 01 – 07 – 03 – 42 - 555/17
Sarajevo, 25. 01. 2017.

UNDP Bosnia and Herzegovina

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n/r gđa. Sezin Sinanoglu, rezidentna predstavica UN

Predmet: UNDP Projekat „Pokretanje okolišnog finansiranja u svrhu nisko-karbonskog urbanog razvoja“ - podrška projektu

Veza: Konsultacije i prezentacija projektnog prijedloga prezentiranog od strane UNDP-a i međunarodnog konsultanta u septembru i novembru 2016. godine

Poštovana g-đo Sinanoglu,

Prezentacijama projektnog prijedloga koje su realizirane u okviru dvije misije međunarodnog konsultanta angažovanog od strane UNDP-a u avgustu i oktobru 2016. godine, upoznali ste nas sa idejom predmetnog projekta. Smatramo da su aktivnosti planirane u okviru ovog projekta od iznimnog značaja za zaštitu okoliša u Bosni i Hercegovini.

Fond za zaštitu okoliša Federacije Bosne i Hercegovine kroz svoje redovne aktivnosti planira sufinansirati grant sredstvima projekte zaštite okoliša i energetske efikasnosti u iznosu od 26.150.627 USD, odnosno 5.230.125 USD za svaku godinu, a u periodu implementacije ovog projekta. S tim u vezi, ovim putem izražavamo našu podršku implementaciji projekta „Pokretanje okolišnog finansiranja u svrhu nisko-karbonskog urbanog razvoja“.

Sredstva izdvojena za sufinansiranje predmetnog projekta se odnose na redovne aktivnosti Fonda za zaštitu okoliša Federacije Bosne i Hercegovine koje su u skladu sa okolišnom i energetske politikom Federacije Bosne i Hercegovine a koje se odnose na aktivnosti integrisane u komponente projekta kako slijedi:

- Komponenta 1: Inovativni finansijski mehanizmi za nisko-karbonski urbani razvoj;
- Komponenta 2: Nisko-karbonske zgrade javne namjene i komunalne usluge;
- Komponenta 3: Podrška uspostavljanju nisko-karbonskog sistema upravljanja otpadom i vezanom logistikom;
- Komponenta 4: Priprema državnih / entitetskih / lokalnih (Lokalni klimatski akcioni planovi) / sektorskih politika i regulatornih okvira za promoviranje najboljih nisko-karbonskih praksi i tehnologija u urbanim sredinama.

S tim u vezi, sredstva izdvojena za sufinansiranje će biti iskorištena direktno za finansiranje planiranih projektnih aktivnosti.

Na kraju želimo da se zahvalimo na dosadašnjoj podršci u nadi da će se, kroz saradnju na implementaciji ovog projekta, ostvariti značajni rezultati i omogućiti dalji razvoj okolišnog finansiranja i nisko-karbonskog urbanog razvoja u Federaciji Bosne i Hercegovine, te olakšati okolinsko finansiranje i razvijanje inovativnih sistema finansiranja u ovom polju.

S poštovanjem,


DIREKTOR
Dr. sci. oec. Fuad Čibukčić

Dostaviti:
- naslovu,
- a/s

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<http://www.fzobih.org.ba>

Subject: UNDP Project "Catalyzing Environmental Finance for Low-carbon Urban Development" – support to the project

Dear Ms. Sinanoglu, Resident Representative of UN

The Project proposal that is presented by international consultant engaged by UNDP during his two missions in August and October, 2016 have introduced to us an idea of this Project. We find those activities very important for environment sector in Bosnia and Hercegovina.

Environmental Fund of the Federation of Bosnia and Hercegovina within its regular activities plans to co-finance, through grants, projects that are related to environment protection and energy efficiency in amount of 26.150.627 USD, more precisely 5.230.125 USD per year for period of Project implementation. In this regards, we hereby express our support to the implementation of Project Catalyzing Environmental Finance for Low-carbon Urban Development.

The funds singled out for co-financing of Project are related to activities that are implemented on regular basis by Environmental Fund of the Federation of Bosnia and Hercegovina and that are in line with environment and energy legislation of Federation of Bosnia and Hercegovina and integrated into Project components as follows:

Component 1: Innovative Financing Mechanism for Implementation of Low-Carbon Urban Development Concept (LCUD)

Component 2: Low-carbon public facilities and utilities

Component 3: Low-carbon waste management and logistics

Component 4: Preparation of national/entity/local (Local climate action plans)-level policies / sectoral policies and regulatory frameworks for promotion of the best low-carbon practices and technologies in urban environments

Taking into consideration all of the above, funds for co-financing will be directly used for implementation of planned Project activities.

At the end, we want to thank you for your support and we sincerely hope that trough our cooperation within implementation of this Project we will make good results and enable further development of environment financing and low carbon development in Federation of Bosnia and Hercegovina, and to smooth the way for further developing financing systems in environment sector.

Sincerely,

Fuad Čibukčić
Director



ФОНД ЗА ЗАШТИТУ ЖИВОТНЕ СРЕДИНЕ
И ЕНЕРГЕТСКУ ЕФИКАСНОСТ
РЕПУБЛИКЕ СРПСКЕ



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Број: 04-229/17

Датум: 20.02.2017. године

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Змаја од Босне бб
71 000 Сарајево, БиХ

**Предмет: УНДП Пројекат „Catalyzing Environmental Finance for Low-carbon Urban Development“ -
podrška projektu**

Поштована г-ђо Синанолу,

Фонд за заштиту животне средине и енергетску ефикасност Републике Српске потврђује своју подршку и партиципацију у имплементацији GEF пројекта „Catalyzing Environmental Finance for Low-carbon Urban Development“.

Износ суфинансирања за имплементацију горе наведеног пројекта износи 11.400.000 USD грант средстава у периоду трајања пројекта. Средства издвојена за суфинансирање предметног пројекта се односе на редовне активности Фонда које су у складу са политиком заштите животне средине и енергетском политиком Републике Српске, а које се такође осликавају и кроз активности интегрисане у компоненте пројекта како слиједи:

- Компонента 1: Иновативни финансијски механизми за ниско-карбонски урбани развој;
- Компонента 2: Ниско-карбонске зграде јавне намјене и комуналне услуге;
- Компонента 3: Подршка успостављању ниско-карбонског система управљања отпадом и везаном логистиком;
- Компонента 4: Припрема политика и регулаторних оквира за промовисање најбољих ниско-карбонских пракси и технологија у урбаним срединама.

С поштовањем,



директор

Срђан Тодоровић

E-mail: info@ekofondrs.org

ЈИБ: 4402590740000

Subject: UNDP Project "Catalyzing Environmental Finance for Low-carbon Urban Development" – support to the project

Respected Ms. Sinanoglu,

Fund for environmental protection and energy efficiency of Republic of Srpska confirms its support and participation in implementation of GEF project "Catalyzing Environmental Finance for Low-carbon Urban Development".

The amount of co-financing for implementation of abovementioned project is 11.400.000 USD grant funds in the period of project implementation. The funds allocated for co-financing of the Project are the ones that originates from regular activities of the Fund which are in line with the policy of environmental protection as well as energy policy of Republic of Srpska, all reflected in the activities integrated in the components of the Project as follows:

- Component 1: Innovative Financing Mechanism for Implementation of Low-Carbon Urban Development Concept (LCUD)
- Component 2: Low-carbon public facilities and utilities
- Component 3: Low-carbon waste management and logistics
- Component 4: National and sector policies, institutional coordination and awareness-raising on LCUD

Yours Sincerely

Srđan Todorović,

Director of the Fund for environmental protection and energy efficiency of Republic of Srpska

Annex L: Gender assessment and action plan

Gender refers to the socially constructed differences between females and males throughout the life cycle that are learned and deeply rooted in every culture, are changeable over time, and have wide variations both within and between cultures. Gender, coupled with intersections of age, class, race and able-bodiedness, governs the roles, opportunities, power and resources for women and men in any society²⁵.

Even though *Catalyzing Environmental Finance for Low-carbon Urban Development* project is largely of technical nature, it is essential to take into consideration that many project interventions impact men and women differently, which is why gender is considered as one of the cross-cutting issues requiring due consideration in the planning, implementation and evaluation stages of the activities.

Therefore, gender sensitive low carbon development is seen as a multi-dimensional approach that encompasses social transformation and changes in production patterns and technologies, avoiding dangerous climate change. This includes reducing carbon emission, while recognising different energy needs of people and countries and addressing existing gender inequalities in carbon emission and energy production. It includes decoupling economic growth from carbon emission and increasing climate-resilience, but avoiding pure technology centered solutions, instead striving for an environmental healthy planet and a gender-just and low carbon society²⁶. The Sustainable Development Goals (SDG) include energy security for all, health, sustainable livelihoods, for women and men. With SDG 5 aiming to achieve gender equality and empower all women and girls, LCUD must take into consideration the interplay between techno-economic and social-political aspect, by taking into account societal change, such as institutional settings (i.e. care economy), gender-biased power relations, and cultural values. LCUD should also employ an interdisciplinary and multilevel approach, encompassing vertical (national-local) and horizontal (academia, private sector, women's groups) levels of governance and decision-making²⁷.

Therefore, while devising most effective strategies and methods for initiating a transformational shift towards LCUD in BiH - the project will seek to capitalise on the know-how and experience that women could provide to the process. Not assuming that such processes are gender neutral will lead to utilizing female perspectives and leadership in BiH for promoting safer, cleaner, and healthier cities and reducing GHG emissions. Empowering women, therefore, can be the key to transformational shift towards low-carbon urban development, while pursuing traditional approaches is likely to reinforce the existing inequalities. Teaming up with community initiatives such as CityOS (<http://docs.cityos.io/docs/cityos-air-story>), whose goal is to empower people with the skills and knowledge to take action against air pollution, might be particularly effective.

25 UNDP and GGCA. Gender and Energy.

<http://www.undp.org/content/dam/undp/library/gender/Gender%20and%20Environment/PB4-AP-Gender-and-Energy.pdf>

26 <http://comm.gendercc.net/course/view.php?id=12>

27 ICLEI Local Governments for Sustainability. Women and Climate Change Manual.

http://seas.iclei.org/fileadmin/user_upload/SEAS/Documents/Women_and_Climate_Change_Manual.pdf

Gender and Energy Intersections: Gendered Energy Divide

- ✓ Energy poverty has gender dimensions: Men and women have different energy dynamics (roles in household, decision-making areas, energy needs, coping mechanisms). For example, women are generally more vulnerable to health hazards from pollution generated by fuels such as coal, wood, and charcoal.
- ✓ Without access to modern energy services, women (especially poor women) spend most of their day performing basic subsistence tasks which limits wage, education opportunities as well as social and political interaction.
- ✓ Women are often excluded from discussions about energy plans and policies. Excluding women from decision-making is likely to result in gender-blind planning, financing, execution and implementation.

1.) Engage Women for Unique Perspectives

Engaging women as active stakeholders in project processes and using them as agents of change to promote and carry forward the shift towards low-carbon urban development, is important because women have noteworthy experience and know-how as a result of their multiple societal roles - they have critical insight, perspectives and knowledge to significantly support shift towards low-carbon urban development at large. If women continue to be excluded from discussions about energy plans and policies and decision-making- this is likely to result in gender-blind planning, financing, execution and implementation.

In practical terms, this project can do both, crowdsource the ideas of women throughout the project cycle, as well as promote parity and equitable inclusion of women while cooperating with the partners, such as the environmental finance institutions: the Environmental Funds of FBiH and RS, as well as municipalities- so that they are adequately represented and their voice is heard.

2.) Empower Women

The project puts forward the argument that women and men should be involved in the project whenever possible on equal terms, or at least in a more balanced way. This entails all aspects from project planning, decision making processes including membership of project boards, and internal management arrangements- that should be based on the principles of parity. This also means ensuring that women benefit on equal or fair terms from all capacity building activities provided by the project, including those within the municipalities, SME and public utilities involved in waste handling on the subject of new financial modalities and tariffs set up.

Also, the project will particularly seek to promote equal participation of women while working with municipal staff on strengthening capacities for development of project proposals and technical and financial capacities to implement them, as well training on EMIS usage. The project will seek to ensure that at least 40% of all staff of the EFs and environmental ministries trained and gained first-and experience with implementation of proposed mechanism, as well as that on raising financing for environmental projects from international sources- are women. Besides capacity and knowledge development, the project will seek to enhance the roles and status of women as participants and agents of change, build on their strengths and experiences, knowledge and coping capacity, and ensure women's access to information. This includes developing and integrating gendered and accessible capacity building programs.

3.) Gender Mainstreaming

Gender mainstreaming has been the primary method for integrating a gender approach into environment and development efforts. In practice, gender mainstreaming means deliberately giving visibility and support to both women's and men's contributions individually, rather than assuming that both groups will benefit equally from gender-neutral development interventions²⁸. Within a project context, gender mainstreaming commonly includes identifying gaps in equality through the use of sex-disaggregated data, developing strategies and policies to close those gaps, devoting resources and expertise to implementing such strategies, monitoring the results, and holding individuals and institutions accountable for outcomes that promote gender equality.

For example, while working on the Project Component 1, while working at the local level with relevant public authorities with the aim to initiate low-carbon investment projects in the public building sector- the project will aim to ensure that the grant eligibility and selection criteria and methodologies criteria for grants are gender sensitive, and/or that the selected projects apply gender sensitive budgeting whenever possible. Furthermore, under the project Component 4, while working with entities on supporting EFs and other relevant authorities to design and adopt policies and regulations to scale-up low-carbon investment, gender aspects will be examined and if identified, then they will be suggested for further consideration. Assessments of the effects of LCD policies and regulations have to take environmental, social and gender equality benefits into account, such as clean air, biodiversity conservation, health, job creation for women and men, livelihoods and livable cities for all²⁹. Also, potential adverse effects in all these respects have to be analysed. This is important because gender neutral interventions can create or exacerbate gender inequalities and vulnerabilities. Finally, the project will seek to prioritise those buildings that have a high gender equality impact such as schools, public child-care centers, centers for social work, employment offices, municipalities and public buildings that provide services to citizens.

Questions to consider while working on gender mainstreaming in low carbon development

- ✓ Does the policy affect women and men differently and might it lead to positive/negative impacts on gender equality?
- ✓ What data/knowledge is available to assess the impacts of the measure on gender equality, e.g. sex-disaggregated data?
- ✓ To what extent does the project contribute to increasing women's influence in policy design, planning and decision-making processes?
- ✓ Do the financial resources and measures benefit women to the same extent as men? Does the project lead to a more balanced distribution of public resources among women and men?

4.) Data Collection

The project will ensure both that the sex disaggregated data is collected, and also that data collection process is gender-sensitive:

- Secure balanced number of women and men participating in all aspects of the project, and ensure that diversity is reflected in staff composition
- Collect opinions of recognized women's representatives as well as women NGOs
- Collect sex disaggregated data on project activities (training, projects, partners).

²⁸ UNDP and GGCA. Gender and Energy.

<http://www.undp.org/content/dam/undp/library/gender/Gender%20and%20Environment/PB4-AP-Gender-and-Energy.pdf>

²⁹ Low Carbon Development from a Gender Perspective, Alber, 2013.

http://comm.gendercc.net/pluginfile.php/329/mod_resource/content/1/Draft_GenderCC_Low_Carbon_Development_Gender_Perspective.pdf

5.) Awareness Raising

Gender aspects and issues will be explored and adequately included in the project awareness raising and advocacy campaign which aims to reach out to at least 50% of BiH targeted urban population (1,000,000 people). Not only will women be adequately represented in this campaign, but a number of issues will be addressed from a gender lens, and the perspectives of women included in order to mobilise greatest possible support of female population in promoting behavioural changes towards low-carbon urban living.

Table below shows indicators and targets for project activities, taken directly from the Project Results Framework, with gender-related conditions highlighted.

Objective and Outcome Indicators	Baseline	Mid-term Target	End of Project Target	Assumptions
Number of new development partnerships with funding for improved energy efficiency and/or sustainable energy solutions targeting underserved communities/groups and women	0	2 new partnerships with EFs for implementation of the financial support mechanism set-up	2 new partnerships with EFs for implementation of the financial support mechanism set-up	<ul style="list-style-type: none"> • Commitments and capacities in place at EFs to implement proposed financial support mechanism
Number of project beneficiaries, including % of women	N/a	6,000 (including 60% - women)	15,000 (including 60% - women)	<ul style="list-style-type: none"> • The procurement process is efficient and timely • Co-financing realized
Number of people benefitted from capacity building trainings	N/a	600 (including at least 20% women)	1600 (including at least 20% women)	<ul style="list-style-type: none"> • The procurement process is efficient and timely • Co-financing realized
Number of people benefitted from improved urban infrastructure (public buildings and waste management systems)	N/a	5,400 (including 40% women)	13,400 (including 40% women)	

6) Consultation and stakeholder involvement

In the project preparation phase, consultation has been carried out with all key stakeholder groups, allowing for equal inputs from both men and women. Women have filled key roles in preparation, including the lead national consultant responsible for research and project scoping; and lead representatives of key agencies working with the project team. The workshop related to presentation of project proposal has had equitable participation of women with 20 women participants (out of the total of 41 participants). Every effort will be made to ensure that qualified women will be proportionally represented on the Project Board. Institutions to be consulted on gender issues at national level will include, but not limited to focal points for gender at government ministries, civil society organizations working in the fields of gender and climate change, as well as research institutions and development partners working on gender issues.

XII. TECHNICAL ANNEXES

Annex I: Map

Annex II: Analysis of urban GHG emissions in BiH

Annex III: Status of SEAPs

Annex IV: Baseline Analysis and Barriers to Low-Carbon Urban Development in BiH

Annex V: GHG emission reduction assessment (GEF-STAP tool)

Annex I: Map



Annex II: Analysis of urban GHG emissions in BiH

1. The per capita greenhouse gas (GHG) emissions of BiH are just over half of the EU average, but compared to relative wealth, Bosnia and Herzegovina's emissions are almost four times higher than those of the EU. Additionally, although BiH has one of the lowest per capita GHG emissions in Europe (five tons CO_{2e} per capita per year, which is approximately half of the EU average), compared to its size, in country impact of those emissions as well as overall climate change impacts are well observed.
2. The priority for BiH towards decreasing emissions is to strengthen its institutional and professional capacities for developing and implementing climate policy, monitoring greenhouse gas emissions, and planning, implementation, monitoring, reporting and verifying mitigation actions.
3. The base year emissions of BiH before the break-up of Yugoslavia were 34.04 Mt CO_{2e} equivalent, of which energy sector (including fuel for transport) was responsible for 26.5 Mt CO_{2e}. Emissions dropped significantly during the war period from 1992-1995 and in 2001 were 12.03 Mt CO_{2e}, less than half of the base year figure. Subsequently, energy sector emissions have increased almost to pre-war levels (21.8 and 24.02 Mt in 2012 and 2013).
4. According to the Second National Communication to the UNFCCC, a total amount of emissions from key sources covered was 16.090 Mt CO_{2e} or more that 99%. A major share comes from public electricity and heat production (49%), followed by the road transportation (15.1%), agricultural soils (8.4%).
5. Average emission share of CO_{2e} from different sources in BiH for period 2002-2013, shows largest emissions from energy sector (53%), while emissions from transport from 9% to 13%. Emissions from industrial process (3-10%) and waste (4-6%) are almost the same (see Figure II-1).

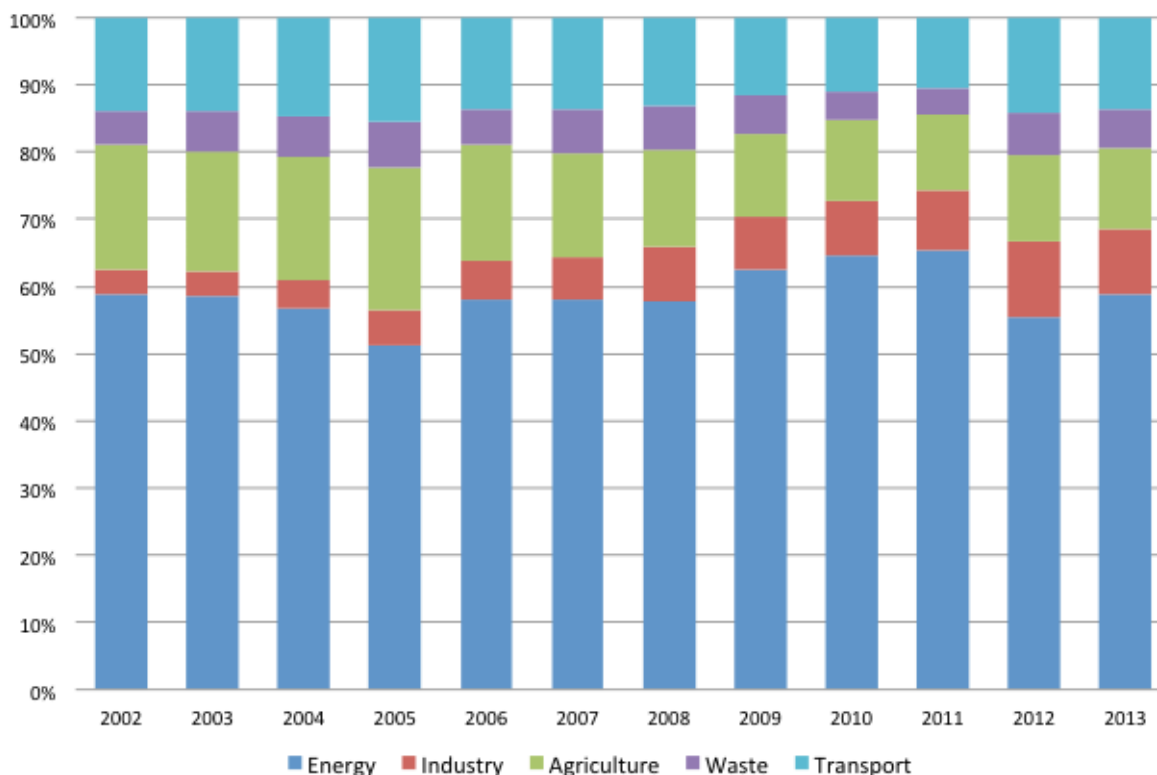
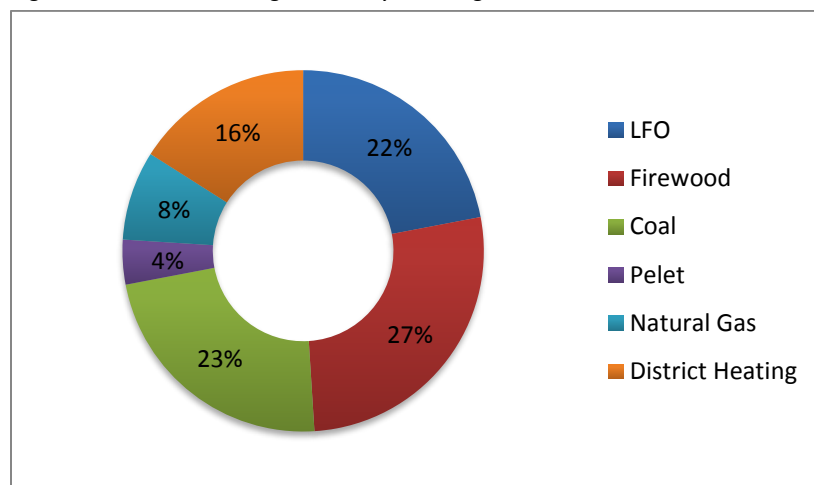


Figure II-1: Average emission share of CO_{2e} from different sources in BiH for period 2002-2013

6. Emissions in 2010 (5.18 t CO_{2e} per capita per annum in 2008) are still among the lowest in Europe. Per capita emissions are just over half of the EU average (9.93 t) and emissions per unit of GDP are almost four times higher than those in the EU (0.4 kg/EUR). These statistics illustrate the economic and social challenges for BiH; caught in the poverty trap with low emissions, but even lower GDP per capita.
7. Energy Use and GHG emissions in Building Sector. Buildings are responsible for large (30-40%) share of urban GHG emissions in BiH. Dated back to the 2nd half of XIX century, most of BiH building stock is characterized by poor heat-insulated characteristics, which have emerged as result of lack of regulations governing thermal performance of buildings. Most buildings have no or insufficient insulation thickness. Having in mind the age of these buildings (in average 40 years old) and the manner of their maintenance (mostly poor), specific annual energy consumption for heating in this sector is high, i.e. around 200 kWh/m² in residential buildings, 240 kWh/m² in educational buildings, and up to 600 kWh/m² in health sector. According to 2nd National Communication to UNFCCC, there exist a high potential to reduce energy use and GHG emissions of up to 80% by improving thermal performance of building envelope (thermal insulation of roofs, exterior walls, floors, better sealing, replacement of windows) and replacing HVAC systems and biomass/coal heat boilers with more efficient ones. For example, it was estimated that application of the above-mentioned measures only in the public buildings in the City of Banja Luka could yield energy saving of 36,000 MWh and GHG emissions reduction of 1,000 tCO₂/year³⁰.
8. In addition to energy efficiency, significant potential for GHG emissions reduction lies in fuel switch³¹ measures: over 80% of public sector buildings are currently using fossil fuels (coal, light fuel oil (LFO), natural gas) or district heating systems, which are also predominantly coal-based. Deployment of BiH's vast renewable energy resources – bioenergy (biomass/biogas), solar and other sources – combined with investments in energy efficiency, therefore have the potential to play an instrumental role in reducing GHG emissions and energy use in cities.

Figure II-2 Public Buildings in BiH by Heating Source



Source: UNDP's own calculation based on EMIS data

9. Urban Waste Management. The share of GHG emissions from waste management in BiH is very small: only 3% of total emissions. Still, considering that the average municipal waste generation per capita in the Western Balkans (Albania, Croatia, Serbia) ranges between 334 and 367 kg, the estimated annual quantity in BiH, in the

³⁰ Banja Luka City Sustainable Energy Action Plan (SEAP), 2012

³¹ Fuel switch measures (i.e. replacement of boiler and change of baseline fuel source) have a double impact on energy use/GHG emission reductions in buildings. First, large energy saving/GHG emission reduction (30-40%) can be achieved through enhancement of the fuel utilization coefficient: older, inefficient boilers utilize only 60% of fuel to heat, whereas new, efficient boilers utilize up to 94% of fuel to heat. Second, replacing fossil fuel with renewable energy alternatives, such as biomass or solar, means that the residual energy (heat) demand in buildings can be supplied on a zero-emission basis.

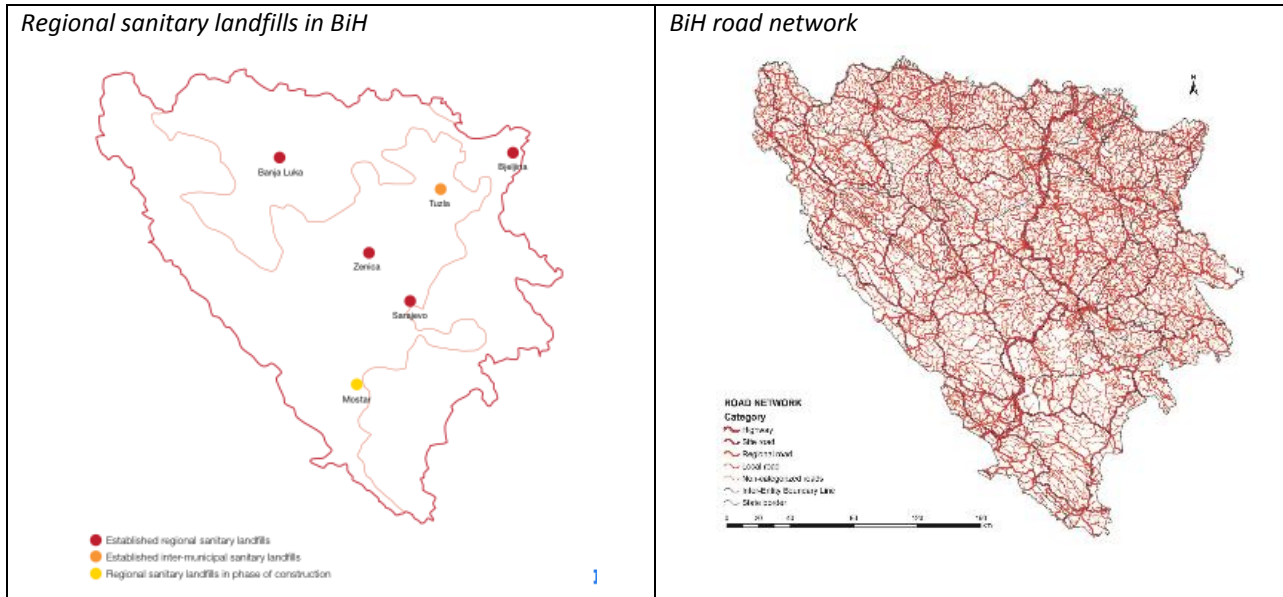
amount of 396 kg per capita, is above average. Recyclables separated from the mixed municipal waste amount to less than 5% of the total, while the rest 95% is disposed at (mostly) non-sanitary disposal sites. A particular problem in BiH is a large number of illegal dumping sites (about 600), which are also a significant source of GHG emissions. Improved waste management practices, such as reduction of waste volumes, recycling, energy generation and improved logistic of waste collection and transportation, can have a significant impact on emission reductions beyond waste sector, as well as lead to other global and local environmental benefits.

10. The average amount of municipal waste generated is 1.08 kg per capita per day. The quantities of waste generated in Bosnia and Herzegovina in the period 2010-2014 are amounted from 1,152,690 t to 1,163,370 t, respectively, expressing a slight increase of 1%. Coverage of collection services varies between 72% and 74%. Recycling rate is between 1-3%. Between 65%-70% of collected waste is disposed at the existing regional landfills (Sarajevo, Zenica, Bijeljina, Prijedor).
11. Waste emissions in 2014 were around 80 GgCH₄ or around 6% of total waste emissions in BiH. There is no data on emission from the waste transport. Potentials for emission decrease is high, having in mind existing practices and possibilities of Recovery, Recycling and Reuse introduction (up to 50%), as well as optimization of waste collection routes.
12. GHG emissions from urban and peri-urban transport. Transport sector is not only one of the largest, but also constantly growing source of GHG emissions in BiH. According to projections made in the 2nd NC, in the business-as-usual scenario transport emissions will increase two-fold by 2025. Most of the traffic activities are concentrated within urban centers and on the roads connecting them. The overall volume of road transport in BiH is represented by two indicators: cargo transport and passenger transport. According to Biannual Update Report (BUR) to UNFCCC (2014), the volume of transport in both categories in 2013 increased compared to 2011 by approximately 3%. The situation is aggravated by the fact that number of vehicles constantly increases (785,890 vehicles has been registered in 2013, an increase of 0.8% over the preceding year³²), against the drop in public transport services.
13. BiH has low emissions of CO_{2e} from transport (25% below the global average and 77% below OECD) average, and less than 7% of total emissions compared to approximately 20% in the EU27. Greenhouse gas emissions in this sector come mainly from road transport (more than 90% of total emissions). If the domination of road transport continues, greenhouse gas emissions will rise and by 2030 will be approximately twice as large as today (more than 5 million t of CO_{2e}). Thus, there is potential for mitigation measures in avoiding future emissions in the road transport sector.
14. Engagement is limited by the inadequate baseline data and, as a result, decisions do not necessary correspond to the real needs. Significant investments have been made by the EFs and Development Agencies (SIDA – 10 mln EUR, WB 64,6 mln EUR loan and 6,3 mln EUR grant; IPA around 17 mln EUR) in period 2007-2014. However, the majority of the projects until now have been aimed towards construction of regional sanitary landfills, without undertaking deeper analysis on optimization and adaptation of remaining municipal system. While municipalities are willing to take different actions, they lack required knowledge and expertise.
15. Lack of data on waste amounts, emission levels per waste type and waste composition is the main barrier in this respect: such data are necessary to determine GHG emission reduction potentials, identify and prioritize high impact projects, as well as assess the cost-effectiveness of suggested interventions. Database on waste streams, amounts and handling practices is currently lacking; only when key parameters of the waste streams are known, can a plan be formed, selecting appropriate waste management approaches and equipment, as required by the international best practices and policies, such as the EU Waste Framework Directive (Article 28a). Further, there is no technical unit in BiH, which has capacity and mandate to collect and analyse such data and support municipalities in the area of waste management, including advice on best available practices and technologies in the sector.
16. Another opportunity to reduce GHG emissions is associated with optimization of waste collection system which could lead to up to 50% shorter transport distances and hence 50% less emissions. Most of the public utilities

³² Biannual Update Report to UNFCCC, 2014

running the waste collection and disposal, however, does not use optimized transport routes for waste collection. At the moment, there are three functional regional landfills in FBiH (Sarajevo, Zenica, Mostar). Already several large projects³³ support development of feasibility studies and drafting of the alternative transport routes for these regional landfills. However, the remaining challenges lay in the route optimization for the remaining municipal and new (to be constructed) regional landfills (see Figure 3).

Figure II-3: Establishment of regional sanitary landfills in BiH



Sources: State of Environment Report of BiH 2012; 2nd National Communication to UNFCCC

³³ Solid waste management Project 1: 2002-2010 & Solid waste management Project 2: 2009-2017 (<http://www.worldbank.org/en/country/bosniaandherzegovina/projects/all>); IPA 2008: 5 Feasibility studies i 6 Localisation studies; IPA I – 2010, Banja Luka; Mostar; Neum, Srebrenik, Bosanska Krupa and Sarajevo;

Annex III: Status of SEAPs

<i>Signatories</i>	<i>Council deliberation</i>	<i>Commitments</i>	<i>Analysis Status</i>	<i>Baseline year</i>	<i>Emission factor</i>	<i>Baseline tonnes CO₂/capita</i>	<i>Baseline MWh/capita</i>	<i>% reduction - tonnes CO₂</i>	<i>reduction-tonnes CO₂</i>	<i>Additional documents and summaries</i>
Gračanica, BA	31 Mar 2015	2020 CO2 target	Pending clarifications requested	2005	IPCC	3.8	9.9	27%	49640.8	http://goo.gl/LStpcO
Kakanj, BA	30 Dec 2013	2020 CO2 target	Pending clarifications requested	2007	IPCC	1.8	6.2	20%	16094.4	http://goo.gl/lGv9qg
Bihac, BA	14 Jun 2012	2020 CO2 target	Pending clarifications requested	2010	IPCC	3.3	7.9	20%	40445.5	http://goo.gl/Gmwixd
Municipality of Bosanski Petrovac, BA	11 May 2016	2020 CO2 target	Action Plan submitted	NA	NA	NA	NA	NA	NA	http://goo.gl/vlq4fb
Doboj, BA	28 Dec 2015	2020 CO2 target	Action Plan submitted	2013	IPCC	3.6	12.3	20%	49264.6	http://goo.gl/kazIK9
Livno, BA	22 May 2012	2020 CO2 target	Action Plans accepted	2009	IPCC	2.9	9	20%	18834.7	http://goo.gl/lrw8nO
Travnik, BA	16 Mar 2012	2020 CO2 target	Action Plans accepted	2005	IPCC	2.2	7.6	20%	23939.1	http://goo.gl/c1YZTm
Gradiška, BA	28 Feb 2012	2020 CO2 target	Action Plans accepted	2005	IPCC	3	7.9	28%	51558.3	http://goo.gl/iZHrV7
Zenica, BA	29 Dec 2011	2020 CO2 target	Action Plans accepted	2006	IPCC	1.9	5.8	20%	48229.8	http://goo.gl/ThJzle
Trebinje, BA	7 Dec 2011	2020 CO2 target	Action Plans accepted	2001	IPCC	3.9	6.7	22%	26141.6	http://goo.gl/ejixE3

<i>Signatories</i>	<i>Council deliberation</i>	<i>Commitments</i>	<i>Analysis Status</i>	<i>Baseline year</i>	<i>Emission factor</i>	<i>Baseline tonnes CO₂/capita</i>	<i>Baseline MWh/capita</i>	<i>% reduction - tonnes CO₂</i>	<i>reduction-tonnes CO₂</i>	<i>Additional documents and summaries</i>
Prijedor, BA	8 Nov 2011	2020 CO2 target	Action Plans accepted	2008	IPCC	2.6	12.6	20%	52081.4	http://goo.gl/32YuT1
Bijeljina, BA	4 Oct 2011	2020 CO2 target	Action Plans accepted	2004	IPCC	2.9	11.4	31%	139769.8	http://goo.gl/6CrmrW
Tuzla, BA	13 Jul 2011	2020 CO2 target	Action Plans accepted	2002	IPCC	3.8	9.2	21%	124603.3	http://goo.gl/u31dtK
Zvornik, BA	12 May 2011	2020 CO2 target	Action Plans accepted	2009	IPCC	2	8.8	20%	24265	http://goo.gl/LSI4ti
Laktasi, BA	18 Mar 2011	2020 CO2 target	Action Plans accepted	2008	IPCC	2.3	6.7	21%	19696.4	http://goo.gl/Xo5Z3a http://www.eumayors.eu/about/signatories_en.html?city_id=2585&seap
Sarajevo, BA	22 Jan 2011	2020 CO2 target	Action Plans accepted	2008	IPCC	2343.8	6352.6	20%	204852	http://goo.gl/WJqhx4
Banja Luka, BA	30 Mar 2010	2020 CO2 target	Action Plans accepted	1990	IPCC	3.4	7.5	20%	132864.6	http://goo.gl/0sdUTI

Annex IV: Barriers to Low-Carbon Urban Development in BiH

1. Transition to low-carbon urban development in BiH is hampered by a range of inter-related barriers. These barriers, grouped in three main categories a) limited access to finance; b) insufficient local capacities; and c) absence of conducive and well-coordinated policy and regulatory framework, are elaborated below.

IA. Access to finance for LCUD projects

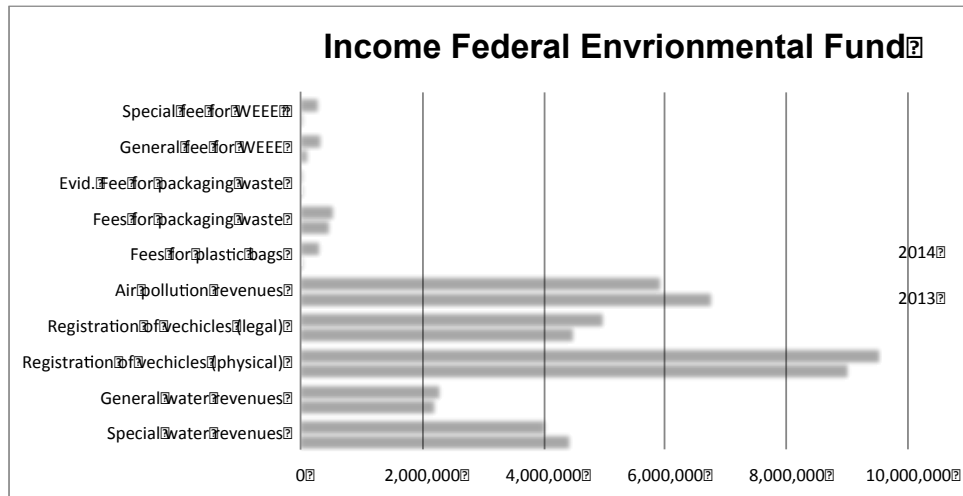
2. Local authorities: Usually, municipalities in BiH rely on sub-national governments and institutions to provide grants and direct transfers to finance their capital investments, but with public expenditures already at 50% of GDP and net government debt at 39.3% of GDP in 2016, such funding is increasingly difficult to obtain. Commercial lending is only in its beginning and municipal authorities have to be creditworthy to access commercial financing. The barriers to access funding stems also from the inadequate legal and regulatory framework, such as (i) a one-year budgeting process that prevents municipalities from amortizing investments through future energy savings; (ii) the requirement to keep separate accounts for capital and operating expenditures, which makes investments (considered capital expenditures) difficult to repay using energy cost savings (considered operating expenses); (iii) line-item budgeting prevents municipalities from using money budgeted for paying energy bills for the repayment of loans for EE investments instead; (iv) there is a lack of budgetary provisions for retaining energy cost savings in future years to repay any debts incurred; (v) the short-term perspectives of local policy-makers makes low-carbon investments that have a payback period longer than 5 years less attractive; (vi) limitations on local borrowing.
3. International Financial Institutions (IFIs): Among IFIs, the EBRD and the World Bank are active in the field of urban development providing commercial (EBRD) and soft loan (World Bank) financing for low-carbon urban projects in BiH. However, the EBRD Western Balkans Sustainable Energy Financing Facility (WEBSEFF) project and World Bank Energy Efficiency (WB EE) project have both experienced difficulties in placing the funds for low-carbon measures in the public sector, confirming that there are still major structural barriers preventing role out of such investments. The EBRD's WEBSEFF is an 'on the market instrument' available for both private and public sector entities and offering a total of €15 M for loans through local commercial banks supported by technical assistance and financial incentives (grants) of up to 15% of the borrowed amount. Over the past 3 years there were no applications for EE retrofits of public buildings. The WB EE project is a dedicated soft loan working through responsible ministries, but still suffers from slow disbursement. Even when the loans are offered under soft terms (like with the WB EE project), the off take is slow because of the existing capacity gaps at the local level (see discussion below).
4. Commercial banks: The commercial banks in BiH are generally aware of LCUD opportunities, with some of the banks participating in programs developed by IFIs and some having their own EE products, but that are mainly offered to residential sector and retail customers. The banks lend on pure commercial terms and there are few instances where the public sector would turn to local banks for financing EE projects. IFIs, like the EBRD, provide technical assistance (TA) and grant supported commercial loans for public and private sectors, but public sector response has been minimal. The primary reasons for this are related to limited capacity of the public sector to take on loans and high interest rates (e.g. 12-14%) on commercial lending.
5. Environmental Protection and Energy Efficiency Funds of FBiH and RS (EFs): Realizing difficulties local authorities face in accessing finance for LCUD projects, the Governments in both entities have established the environmental protection and energy efficiency funds (EFs): the Fund for Environmental Protection of FBiH (EF FBiH) and the Environmental Protection and Energy Efficiency Fund of Republic Srpska (EF RS).
 - **FBiH Environmental Protection Fund (EF FBiH)** was established by FBiH Law on Environmental Fund (O.G. of FBiH", No. 33/03) as a non-profit public institution, which is a legal entity with rights, obligations and responsibilities stipulated by the Law on the Fund and the Fund Statute. The activities of the EF comprise

fund raising, inducement and financing of programme preparation, implementation and development and other similar activities in the field of preservation, sustainable use, protection and improvement of the state of the environment and use of renewable energy sources, especially: professional and other activities in relation to obtaining, managing and utilizing the proceeds of the Fund, liaising with regard to environmental protection financed from funds of other countries, international financial institutions and bodies, domestic and foreign legal and natural persons; providing expert services in terms of financing environmental protection; maintaining databases of programmes, projects and other similar activities in the field of environmental protection and of the necessary and available funds for the implementation thereof; inducing, establishing and achieving cooperation with international and domestic financial institutions and other legal and natural persons to the effect of financing environmental protection in line with the Federal Strategy for Environmental Protection, environmental protection plans adopted on the basis of the Strategy, international agreements to which Bosnia and Herzegovina is a party and other programmes and documents relating to environmental protection.

- **The Fund for Environmental Protection and Energy Efficiency of RS** was founded by the Law on the Fund and funding of environmental protection (“O.G. of RS”, No. 117/11). The Fund conducts all activities in connection with collecting of funds and financing implementation of programs, projects and similar activities in the field of conservation, sustainable use, protection and improvement of the environment, and on energy efficiency. The Fund is a legal entity with public authority. The Ministry conducts supervision of the work of the Fund for the Urban Planning, Civil Constructing and Ecology RS.
6. EFs, particularly in RS, have limited financial means to finance role out of EE projects in public buildings and other LCUD investments.
- The Environmental Protection Fund of FBiH derives its operating income mainly from the following fees charged to polluters and natural resources users based on “Polluters Pay Principle” (PPP): waste water fees (general and special), air polluters, revenues for the environment users – fees for the management with packaging and packaging waste, as well as Waste Electrical and Electronic Equipment (WEEE)³⁴, special fees for the environment to be paid at each registration of motor vehicles (physical and legal entities). Total income for the Fund amounted to about BAM 60 million (about EUR 31 million) annually (see Figure IV-1).
 - The Environmental Protection and Energy Efficiency Fund of RS (EF RS) currently has only one income source, which is an allocation of 5% of the feed-in tariff that is accorded to energy producers that utilize renewable energy sources. The Fund is also to be allocated 15 % of the proceeds from the water protection fees levied in RS on owners of motor vehicles, once this mechanism is fully enforced. Other potential sources of income in line with the Law are polluter pays fees and fees for waste disposal. Total annual income of the Fund amounted to about BAM 2.4 million (about EUR 1.2 million) in 2014.

³⁴ This fees were taken from the legal subjects that are not paying to the waste Operators (are not members). Since 2014, bylaws regulating these wastes were put out of force and those revenues were not being collected. At the moment any waste related revenues are not being collected (specific waste, nor municipal, nor industrial).

Figure IV-1 EF FBiH Income, by sources (in BAM)³⁵



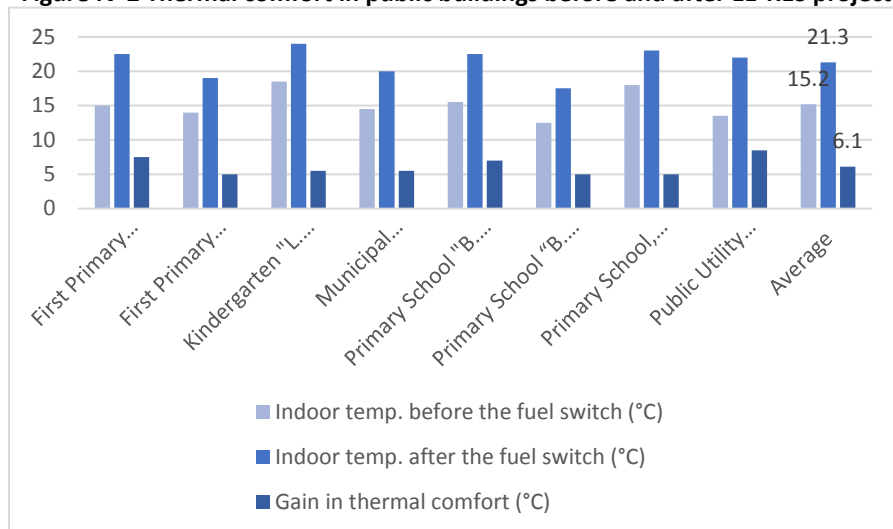
7. **The key barrier** that prevents both EFs from significantly expanding their funding base and therefore scaling-up support to low-carbon urban projects is related to the deficiency in the implementation of the “polluters pays principle (PPP)”. Implementation of PPP requires legal agreements between polluters and the government enabling functional application of the principle in order for the polluters’ fees to be set-up, paid and collected by EFs. PPP also currently does not use market-based and property rights instruments to ensure its enforcement. Main issues in this respect are lack of polluters’ register (main polluters and amounts and types of polluting substances), as well as specific rules and regulations to clarify and improve the application of the paying principles (e.g. determination of the amounts/fees polluter needs to pay; way of calculating fees; damage versus environment, damage versus people; evaluation of damage and impact, etc).

IB. Low Financial Returns from Investment in Low-Carbon Project

8. Investment in low-carbon buildings offers significant socio-economic benefits but does not yet present a convincing financing case for investors. There are several underlying reasons for this. First, low existing comfort levels reduce the share of achievable energy cost savings. UNDP experience confirms that **under-heating and below-standard lighting** are widespread, particularly in school buildings, resulting in longer payback periods in these buildings as the increase in comfort levels absorb significant parts of the achieved energy efficiency improvements. “Under-heating” is defined as the difference between calculated final energy demand for heating based on building audits and indoor temperature requirements, and the real energy consumption based on energy bills. The latter is usually much lower: 44% of public sector buildings are under-heated in BiH and they use 20-30% less energy than required to ensure sufficient thermal comfort (approx. 20-22°C). Consequently, after a building retrofit is implemented, thermal comfort normally improves (See Figure IV-2) but the rebound effect leads to insufficient monetary savings.

³⁵ For additional data, please see: http://www.parlamentfbih.gov.ba/dom_naroda/bos/parlament/propisi/El_materijali_2016/Analiticki%20izvjestaj%20oklois%20za%202014.pdf;

Figure IV-2 Thermal comfort in public buildings before and after EE-RES projects



Source: UNDP 2016. "Analysis of the Benefits of Wood Biomass Fuel Switch Projects implemented by UNDP in Bosnia and Herzegovina"

- Second, financial returns on low-carbon investment in buildings vary significantly depending on the type and costs of **baseline fuel supply in buildings**: in buildings with light fuel oil (LFO) as baseline fuel, investment in energy efficiency and fuel switch can be attractive, whereas for the buildings with coal-based heat systems (and especially taking "under-heating" into account) investment in the same package of technical measures would not bring sufficient returns. This explains large spread in financial IRR of otherwise identical EE-RE measures, as illustrated in Table IV-1. Under such parameters, only a few projects can be financially viable on their own and can secure commercial financing (e.g. loans at 8-10%) without additional grant support or other form of financial incentives.

Table IV-1 Financial and Economic IRR of EE and RE Measures in Public Buildings

Baseline fuel	Adequate occupancy conditions		20% Under-heating*	
	Financial IRR	Economic IRR	Financial IRR	Economic IRR
Coal	3%	14%	-1%	8%
LFO	27%	35%	11%	17%

* Occurs in 44% of public buildings.

- Third, building maintenance practices in the BiH public sector are not adequate and buildings are in poor state of repairs. Therefore, when an energy retrofit is to be implemented it often includes non-EE related measures (e.g. roof repairs, electrical installations replacement, plumbing/drainage replacement, etc.), which increase the costs and contribute to longer pay back periods and lower IRRs. Substandard comfort levels in terms of inadequate lighting or under-heating are also common in public buildings. Energy retrofits should provide for standard requirements for indoor comfort, but with a low baseline due to under-heating or insufficient lighting, the financial returns are again below thresholds for commercial lending.

IIA. Inadequate Local Capacities: Energy Efficiency and Renewable Energy

11. Local authorities generally lack the capacity and knowledge to identify and prepare LCUD projects; similar, there are capacity and knowledge deficiencies with procurement of service providers, works and equipment and for supervising project implementation. As a consequence, when outside services and technical assistance for project preparation are not available, there is little initiative coming out of the public sector.
12. The availability of information about urban energy intensity and real energy costs is essential to estimate financial returns of proposed investments, but such data often prove impossible to obtain. Building on the successes of an earlier project in Croatia, therefore, UNDP prioritized investment in establishing and initial operationalization of a comprehensive Energy Management Information System (EMIS) for public buildings combined with a national buildings database, which now covers 2,100 (out of 5,000) buildings across the country. An effective EMIS is an important tool in catalysing additional investments in energy efficiency as it can prioritize different investments by energy savings, capital requirement and by pay-back period, making it easier to prioritize between different investment opportunities. UNDP-supported EMIS is currently the only available sources of information and data about public buildings in BiH, their real energy use/GHG emissions and energy-related expenditures. Additional assistance is needed to roll-out EMIS implementation to cover the rest of urban sector, (e.g. buildings, utilities, street lighting).
13. The SME sector involved in LCUD project development and implementation has gained considerable professional experience through participation in IDA's capacity building programs and IFI supported implementation of RES/EE in public and private sectors in buildings and industry. Preparation of energy audits and implementation of EE measures are all conducted by local SMEs. The SMEs are also aware of (R)ESCO business model for LCUD project implementation in public sector and some do also offer their services on a (R)ESCO or quasi-ESCO business model. In particular, fuel switching projects in public buildings are gaining momentum as these projects are attractive to investors. Private companies (acting as Independent Heat Suppliers or RESCOs) invest in fuel switching and, after, address biomass supply and system operations. Heat supply companies usually have sister company(ies) dealing with pellet production and/or heating equipment. Building end-users do not incur investment costs and have lower heating costs. The usual contracting period in implemented projects is from 5 to 10 years.
14. However, the **main barrier** for SME sector to grow their (R)ESCO-based business segment is their limited potential to take on loans for financing such services. The SMEs usually have limited assets to offer as collateral to the banks, and limited possibilities to raise finance against their balance sheet. Typically, (R)ESCO projects require large capital outflow at the outset of transaction and repayments come steadily in small instalments over a period of 5-7 years. For a typical SME in BiH, it means that they can engage in 1 or 2 such projects a year and then has to wait for another 5-7 years before loan is repaid until new projects can be initiated.

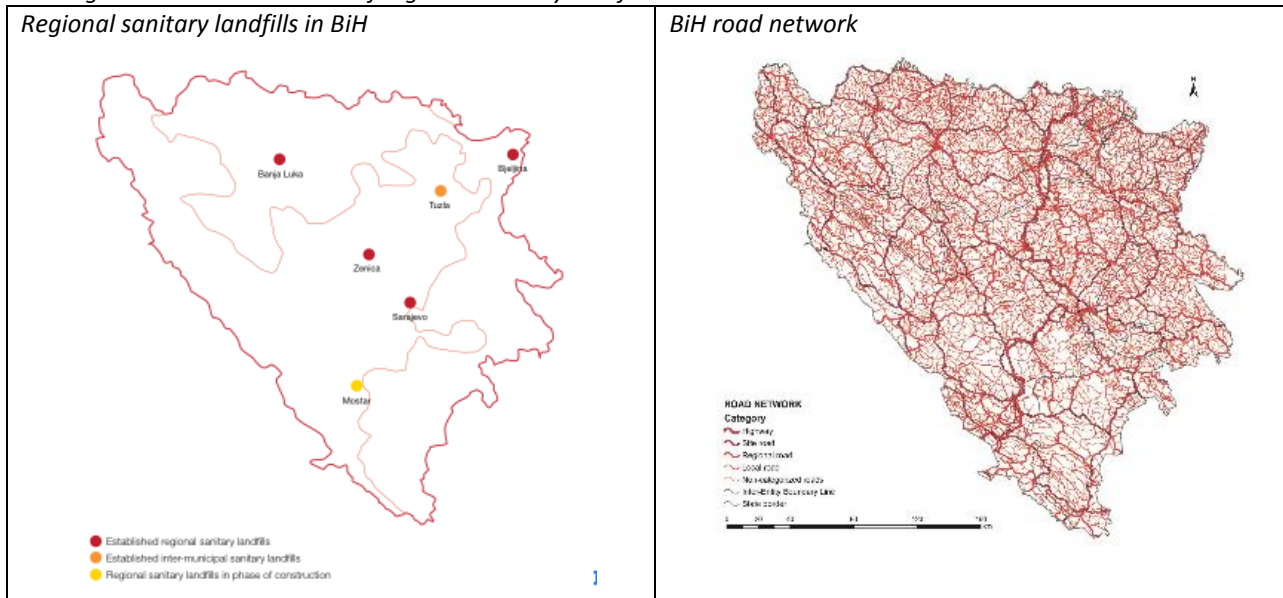
IIB. Limited Local Capacities: Waste management

15. Urban waste management issues in BiH are dealt with by the municipalities, which are lacking internal capacities for development of more effective waste management systems, as well as remediation needs. Despite significant potential for reducing GHG emissions through the "Reduce, Reuse, Recycle" (RRR) approach, planning of waste management is limited by the inadequate baseline data and, as a result, decisions do not necessary correspond to the real needs. Significant investments have been made by the EFs and Development Agencies (SIDA – 10 mln EUR, WB 64,6 mln EUR loan and 6,3 mln EUR grant; IPA around 17 mln EUR) in period 2007-2014. However, the vast majority of the projects until now have been aimed towards construction of regional sanitary landfills, without undertaking deeper analysis on optimization and adaptation of remaining municipal system. While municipalities are willing to take different actions, they lack required knowledge and expertise.
16. Lack of data on waste amounts, emission levels per waste type and waste composition is the main barrier in this respect: such data are necessary to determine GHG emission reduction potentials, identify and prioritize high

impact projects, as well as assess the cost-effectiveness of suggested interventions. Database on waste streams, amounts and handling practices is currently lacking; only when key parameters of the waste streams are known, can a plan be formed, selecting appropriate waste management approaches and equipment, as required by the international best practices and policies, such as the EU Waste Framework Directive (Article 28a). Further, there is no technical unit in BiH, which has capacity and mandate to collect and analyse such data and support municipalities in the area of waste management, including advice on best available practices and technologies in the sector.

17. Another opportunity to reduce GHG emissions is associated with optimization of waste collection system which could lead to up to 50% shorter transport distances and hence 50% less emissions. Most of the public utilities running the waste collection and disposal, however, does not use optimized transport routes for waste collection. At the moment there are three functional regional landfills in FBiH (Sarajevo, Zenica, Mostar). Already several large projects³⁶ support development of feasibility studies and drafting of the alternative transport routes for these regional landfills. However, the remaining challenges at the moment lay in the route optimization for the remaining municipal and new (to be constructed) regional landfills (see Figure IV-3).

Figure IV-3: Establishment of regional sanitary landfills in BiH



Sources: State of Environment Report of BiH 2012 ; 2nd National Communication to UNFCCC

III. Inadequate national and state-level policy and regulatory framework for LCUD

18. Due to fragmented and complex inter-authority jurisdictions and governance structure in BiH, it is difficult to ensure harmonized and well-coordinated approach to implementation of environmental and climate change policies at local level. However, fulfilment of BiH’s obligations, including the NDC under the UNFCCC, is possible only through joint actions of administration and authorities at all levels in BiH. Their actions should be coordinated and undertaken in the frameworks of existing legal systems. For example, although draft plans for improved energy efficiency in public sector (Operational Energy Efficiency Action Plans of public sector buildings in several Cantons in FBiH and Energy Efficiency Action Plan of Republika Srpska in RS) are being laid down, a

³⁶ Solid waste management Project 1: 2002-2010 & Solid waste management Project 2: 2009-2017 (<http://www.worldbank.org/en/country/bosniaandherzegovina/projects/all>); IPA 2008: 5 Feasibility studies i 6 Localisation studies; IPA I – 2010, Banja Luka; Mostar; Neum,Srebrenik, Bosanska Krupa and Sarajevo;

comprehensive and coordinated policy implementation platform and monitoring framework for public buildings is missing. Similar, approaches and principles of public

19. In the field of waste management, at the moment, only legislation on packaging waste and packaged is developed and in force in both entities. By-laws on a number of waste streams need to be adopted, including end of life vehicles, PCB and PCT, waste tyres, waste batteries and accumulators, as well as specific by-laws and provisions requiring recovery, recycling and reuse of certain waste streams.

IV. Low level of public awareness about LCUD

20. City managers, municipalities and urban residents have not yet embraced the principles of low-carbon conscious behaviour, which is essential to achieve lasting and sustainable GHG emission reduction impact. Behavioural changes are also among the least cost and therefore most cost-effective climate change mitigation measures. However, preoccupied with more pressing socio-economic needs, BiH urban residents lack basic awareness and understanding about resource efficiency, sustainable waste management and consumption, as well as environmental and health impacts resulting from urban emissions.

Annex V: GHG emission reduction assessment (GEF-STAP tool)

Provided as a separate document – see Excel tool