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Report No: PAD2914

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT PAPER

ON A

PROPOSED ADDITIONAL LOAN

IN THE AMOUNT OF EUR 27,276,989
(US$ 32,000,000 EQUIVALENT)

TO

BOSNIA AND HERZEGOVINA

FOR THE

ENERGY EFFICIENCY PROJECT

September 25, 2018

Energy & Extractives Global Practice
Europe And Central Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective July 31, 2018)

Currency Unit =	EUR
EUR 0.852 =	US$1

FISCAL YEAR
January 1 - December 31

Regional Vice President:	Cyril E Muller
Country Director:	Linda Van Gelder
Senior Global Practice Director:	Riccardo Puliti
Practice Manager:	Sameer Shukla
Task Team Leaders:	Kathrin Hofer; Rhedon Begolli

ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
BAM	Bosnia and Herzegovina Convertible Mark
BEEP	Bosnia and Herzegovina Energy Efficiency Project
BiH	Bosnia and Herzegovina
CPF	Country Partnership Framework
CO_2	Carbon dioxide
CQ	Consultant Qualifications
DC	Direct Contracting
DFIL	Disbursement and Financial Information Letter
€/ EUR	Euro
EBRD	European Bank for Reconstruction and Development
ECA	Europe and Central Asia
EE	Energy Efficiency
EIRR	Economic Internal Rate of Return
EMF	Environmental Management Framework
EMP	Environmental Management Plan
ESCO	Energy Service Company
EU	European Union
FBiH	Federation of Bosnia and Herzegovina
FIRR	Financial Internal Rate of Return
FM	Financial Management
GAAP	Governance and Accountability Action Plan
GCF	Green Climate Fund
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GRM	Grievance Redress Mechanism
IBRD	International Bank for Reconstruction and Development
IC	Individual Consultant
IDA	International Development Association
IFR	Interim Unaudited Financial Report
IPF	Investment Project Financing
ISA	International Standards on Auditing
ISR	Implementation Status and Results Report
KfW	Kreditanstalt für Wiederaufbau
kgoe	kilogram of oil equivalent
kWh	Kilowatt hours
LED	Light-emitting diodes

MOF	Ministry of Finance
MWh	Megawatt hours
MOU	Memorandum of Understanding
MPP	Ministry of Physical Planning
NDC	Nationally Determined Contribution
NPF	New Procurement Framework
NPV	Net Present Value
OM	Operations Manual
O&M	Operation and Maintenance
PDO	Project Development Objective
PIU	Project Implementation Unit
PPP	Public Private Partnership
PPSD	Project Procurement Strategy for Development
PSC	Project Steering Committee
RFB	Request for Bids
RFP	Request for Proposals
RPD	Regional Procurement Documents
RS	Republika Srpska
RS EE Fund	Environmental Protection and Energy Efficiency Fund in the Republika Srpska
SIDA	Swedish International Development Agency
SOE	Statement of Expenditures
SORT	Systematic Operations Risk-Rating Tool
SPD	Standard Procurement Documents
STEP	Systematic Tracking of Exchanges in Procurement
ToR	Terms of Reference
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
VAT	Value Added Tax
VO	Variation Order

BASIC INFORMATION – PARENT (Energy Efficiency Project - P143580)

Country	Product Line	Team Leader(s)		
Bosnia and Herzegovina	IBRD/IDA	Kathrin Hofer		
Project ID	Financing Instrument	Resp CC	Req CC	Practice Area (Lead)
P143580	Investment Project Financing	GEE03 (9261)	ECCWB (7001)	Energy & Extractives

Implementing Agency: Federation Ministry of Physical Planning; Republika Srpska Ministry of Spatial Planning, Civil Engineering and Ecology

Is this a regionally tagged project?
No

Bank/IFC Collaboration
No

Approval Date	Closing Date		Original Environmental Assessment Category	Current EA Category
13-Mar-2014	31-Dec-2019		Partial Assessment (B)	Partial Assessment (B)

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach [MPA]	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Disbursement-Linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a Non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made disaster
[ ] Alternate Procurement Arrangements (APA)	

Development Objective(s)

The project development objective is to demonstrate the benefits of energy efficiency improvements in public sector buildings and support the development of scalable energy efficiency financing models.

Ratings (from Parent ISR)

	Implementation					Latest ISR
	14-Sep-2015	01-Apr-2016	05-Oct-2016	27-Apr-2017	06-Nov-2017	19-Jun-2018
Progress towards achievement of PDO	S	MS	MS	MS	MS	MS
Overall Implementation Progress (IP)	MS	MS	MS	MS	MS	MS
Overall Safeguards Rating						S
Overall Risk	M	M	M	M	M	M

BASIC INFORMATION – ADDITIONAL FINANCING (Additional Financing for the Bosnia and Herzegovina Energy Efficiency Project - P165405)

Project ID	Project Name	Additional Financing Type	Urgent Need or Capacity Constraints
P165405	Additional Financing for the Bosnia and Herzegovina Energy Efficiency Project	Scale Up	No
Financing instrument	Product line	Approval Date	
Investment Project Financing	IBRD/IDA	30-Oct-2018	
Projected Date of Full Disbursement	Bank/IFC Collaboration		

28-Jun-2024	No		
Is this a regionally tagged project? No			

Financing & Implementation Modalities

[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Disbursement-Linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a Non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made disaster
[ ] Alternate Procurement Arrangements (APA)	
[ ] Contingent Emergency Response Component (CERC)	

Disbursement Summary (from Parent ISR)

Source of Funds	Net Commitments	Total Disbursed	Remaining Balance	Disbursed
IBRD				%
IDA	32.00	24.06	4.82	83 %
Grants				%

PROJECT FINANCING DATA – ADDITIONAL FINANCING (Additional Financing for the Bosnia and Herzegovina Energy Efficiency Project - P165405)

FINANCING DATA (US$, Millions)

SUMMARY (Total Financing)

	Current Financing	Proposed Additional Financing	Total Proposed Financing
Total Project Cost	32.00	41.55	73.55
Total Financing	32.00	41.55	73.55

of which IBRD/IDA	32.00	32.00	64.00
Financing Gap	0.00	0.00	0.00

DETAILS - Additional Financing

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	32.00

Non-World Bank Group Financing

Counterpart Funding	9.55
Borrower	9.55

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any other Policy waiver(s)?

[ ] Yes [✓] No

INSTITUTIONAL DATA

Practice Area (Lead)

Energy & Extractives

Contributing Practice Areas

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF

Yes

b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment

Yes

c. Include Indicators in results framework to monitor outcomes from actions identified in (b)

Yes

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Kathrin Hofer	Team Leader (ADM Responsible)	Energy	GEE03
Rhedon Begolli	Team Leader	Energy	GEE03
Karina Mostipan	Procurement Specialist (ADM Responsible)	Procurement	GGOPC
Lamija Marijanovic	Financial Management Specialist	Financial Management	GGOEW
Emil Zalinyan	Team Member	Economic and financial analysis	GEE03
Esma Kreso Beslagic	Environmental Safeguards Specialist	Environment	GEN03
Gabriela Grinsteins	Counsel	Legal	LEGLE
Helene Pfeil	Team Member	Social Development	GSU03
Jasneet Singh	Team Member	Energy Efficiency	GEE03
Luis M. Schwarz	Team Member	Disbursement	WFACS
Sanja Tanic	Team Member	Program Assistant	ECCBM
Satoshi Ishihara	Social Safeguards Specialist	Safeguards	GSU03

BOSNIA AND HERZEGOVINA

ADDITIONAL FINANCING FOR THE ENERGY EFFICIENCY PROJECT

TABLE OF CONTENTS

I. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING

A. Performance of parent project

1. **Status of the Bosnia and Herzegovina Energy Efficiency Project (BEEP)**. BEEP was approved by the IDA Board of Executive Directors on March 13, 2014, and became effective in the Republika Srpska (RS) on May 27, 2015, and in the Federation of Bosnia and Herzegovina (FBiH) on December 14, 2015. As of August 30, 2018, 83 percent of the IDA credits (IDA-53930 and IDA-55380) have been disbursed and the remaining funds are expected to be fully disbursed before the closing date of the original credit on December 31, 2019. The overall progress towards achievement of the Project Development Objective (PDO) and implementation progress of the parent project are currently rated *Moderately Satisfactory*. A summary of the progress and results achieved under each project component is provided below.

2. **Component 1: Energy Efficiency (EE) Investments in Public Facilities (US$27.37 million equivalent)**. This component supports EE investments in selected public buildings and related technical consultancy services (e.g. energy audits, designs, building energy performance certificates, supervision, technical and social monitoring and evaluation). Implementation progress under Component 1 is rated to be *Satisfactory*. To date, EE improvements in 61 public buildings[1] (29 buildings in the RS and 32 buildings in the FBiH) have been completed. In addition, preparation and implementation of EE investments in 18 additional buildings (three buildings in the RS and 15 buildings in the FBiH) are currently ongoing and expected to be completed in 2018/early 2019. These investments supported under BEEP have helped to demonstrate strong energy savings and other benefits associated with EE improvements, including the following:

- *High energy savings potential and environmental co-benefits:* on average, normative energy consumption in retrofitted buildings was reduced between 53 and 60 percent, resulting in total lifetime energy savings of more than 512,000 MWh and a reduction of lifetime CO_2 emissions by 189,000 tons of CO_2 equivalents; in addition, heating systems in around 15 retrofitted buildings were switched from coal or fuel oil to locally produced pellets or wood chips;
- *Economic and financial viability of EE investments:* using adjusted baselines, the average payback period of investments was 8-9 years, resulting in significant energy cost savings in retrofitted public buildings; in addition, all civil works and the majority of equipment installed was provided by local companies;
- *Social co-benefits:* more than 700,000 children, students, patients, teachers, doctors, nurses and other staff are estimated to have benefitted from improved learning, recovery and working conditions in retrofitted buildings; comfort levels in retrofitted buildings were significantly improved, as demonstrated by the increase in end-users who were 'very satisfied' with indoor temperature levels after the EE improvements (34 percentage point increase in the FBiH and 55 percentage point increase in the RS) and with lighting conditions (23 percentage point increase in both entities).

3. In line with the PDO, EE investments supported under Component 1 were also used to develop and pilot alternative financing and implementation models, which helped to leverage funds, demonstrate strong demand and commitment from local Governments for EE improvements and test scalable EE repayment

[1] Including 40 educational buildings (schools, kindergartens, universities), 15 hospitals and health care facilities and six other public buildings.

schemes. Specific models piloted under the parent project included the following: (i) EE investment costs in cantonal buildings (totaling 24 buildings and accounting for more than 70 percent of EE investments completed in the FBiH) are being repaid by cantonal Governments to the FBiH Ministry of Finance over a 10-year repayment period, which is reflective of the EE investment payback periods and related energy cost savings achieved in these buildings; and (ii) in about 56 percent of all retrofitted buildings, co-financing was provided by other development partners, local Governments and/or Value Added Tax (VAT) refunds on BEEP expenses. In addition, a revolving model is being piloted in the RS, where part of the EE investment costs will be financed through the RS Environmental Protection and EE Fund ('RS EE Fund') and repaid by the municipality on the basis of achieved cost savings.

4. **Component 2: Support for the Development of Scalable Financing Mechanisms and Capacity Building (US$2.71 million equivalent)**. This component provides technical assistance aimed at developing sustainable EE financing mechanisms, strengthening of implementation capacity and enhancing of public awareness on EE. Implementation progress under Component 2 is rated to be *Satisfactory* taking into account the contribution of the project in supporting the gradual transitioning towards scalable EE financing models (through pilots and by supporting the development of a long-term vision for sustainable EE financing), in building market capacity (through on-the-job training and targeted capacity building activities) and in enhancing EE awareness of various stakeholders, including local communities, project beneficiaries and the general public. Specific results achieved include the following:

- *Development of scalable EE financing models:* in addition to the pilots implemented as part of Component 1, an ongoing Issues and Options Study in each entity helped to identify key issues and barriers to improve EE in the public buildings sector, and proposed different options to scale-up and sustain EE financing in the medium- to long-term. Specific options evaluated focus on: (i) a public Energy Service Company (ESCO) model proposed to be operated by the RS EE Fund as well as complementary ESCO financing instruments (e.g. forfeiting, guarantees and loans) aimed at developing the local ESCO market and leveraging private sector financing; and (ii) a revolving EE Fund or public ESCO model proposed to be operated by the FBiH Environmental Protection Fund, and focusing on operationalizing financing instruments aimed at leveraging public and commercial financing through Public Private Partnerships (PPPs) and Energy Service Agreements. The ongoing studies have helped to inform the design of the proposed Additional Financing and to develop a long-term vision to sustain and scale-up EE financing in the public buildings sector (see Table 2).
- *Capacity building to strengthen the EE market and energy management*: as one of the first EE projects in Bosnia and Herzegovina (BiH), BEEP was critical in building the EE capacity of local energy service providers (e.g. energy auditors, design companies, construction firms) through on-the-job training and implementation experience, as demonstrated through a steady increase in the number of responsive bidders and improved quality of technical documentation. In addition, the project supported capacity building for energy management in public buildings by providing training to more than 124 local and building-level energy managers, and by developing Operation and Maintenance (O&M) manuals and guidelines to optimize energy savings in retrofitted buildings.
- *Communication and awareness raising activities*: both entities have conducted targeted communication and awareness raising activities on EE, *inter alia* including specific awareness campaigns for children and students in retrofitted education buildings, regional and local EE conferences and social media campaigns. Based on social surveys conducted for a sample set of retrofitted buildings, a number of schools started introducing education on EE as part of their curriculum and end-user awareness on EE in retrofitted buildings has increased from 66 to 72 percent

in the FBiH and from 35 to nearly 60 percent in the RS.

5. **Component 3: Project Management (US$1.92 million equivalent)**. The two project implementing entities – FBiH Ministry of Physical Planning and RS Ministry of Spatial Planning, Civil Engineering and Ecology (jointly referred to as Ministries of Physical Planning) – have established Project Implementation Units (PIUs) with adequate staffing and expertise. However, recent changes and related processes in replacing key staff within the FBiH PIU have resulted in a downgrade of the rating for project management to *Moderately Unsatisfactory*. As a result, a time-bound action plan and PIU management protocol, satisfactory to the World Bank, were developed and adopted by the FBiH Ministry of Physical Planning to ensure adequate PIU capacity and strengthen PIU-related procedures.

6. **BEEP offers a variety of lessons learned with respect to EE financing**. A variety of lessons were learnt and taken into account during implementation of BEEP and the preparation of the proposed additional financing, *inter alia* relating to technical and operational implementation aspects as well as procurement and contract management of civil works and consultancy services. As one of the first projects that piloted alternative business models (compared to EE grant financing), there are also a number of specific lessons learned with respect to the design of scalable EE financing schemes: (i) offering full-service EE packages – combining financing with technical services for preparation and implementation of EE investments – helps to create demand and address market capacity constraints; (ii) it is important to gradually introduce alternative financing and delivery models that are simple and adjusted to the local market context before moving towards more complex schemes; (iii) unless combined with mechanisms that allow funds to revolve, repayment schemes and co-financing arrangements with local and international partners remain limited in their replication and scale, are ad-hoc in nature and usually constrained to available budget and grant funding resources; (iv) training and capacity building to local energy service providers and public stakeholders on technical, operational and fiduciary aspects relating to EE improvements are critical to ensure sustainability and quality of investments; (v) achievable energy cost savings occur over a relatively long timeframe and are influenced by a number of factors (e.g. fuel prices, end-user behavior, heating degree days), requiring a monitoring approach balancing complexity and accuracy, long-term implementation arrangements and a sufficient capital base to sustain EE investments; and (vi) EE in public buildings continues to face major technical, policy, regulatory, financial and capacity barriers (see paragraph 14) that will have to be addressed to scale-up EE investments and transition to sustainable financing solutions.

B. Rationale for proposed Additional Financing

7. **Scaling-up EE improvements in the public buildings sector**. The main rationale for the proposed Additional Financing (AF) is to build on the strong results achieved under BEEP and scale-up EE improvements in the public buildings sector. A restructuring of the project is being processed along with the AF to incorporate lessons learned and take into account results achieved under the parent project. Specific reasons highlighting the need for scaling-up EE improvements in BiH are further outlined below.

8. **BiH remains the most energy and carbon intensive economy in the Western Balkan region**. At 209 kgoe/US$1,000 GDP, the energy intensity in BiH is not only the highest in the Western Balkan region but also 37 percent higher than the average in Europe and Central Asia (ECA) and more than double the average in the European Union (EU). Unlike other ECA countries, energy intensity in BiH has increased by around 30

percent since 2005. Partly mirroring the high energy intensity and reliance on coal,[2] the country emits about six times more CO_2 per US$ GDP compared to the EU and almost 60 percent more than the average in ECA.[3] The high energy and carbon intensity adversely affects the country's economic competitiveness, represents an important environmental challenge, constrains the ability to efficiently meet growing energy demand in a sustainable way and impacts the potential for optimizing revenues from energy exports.

9. **The buildings sector is a major contributing factor to the high energy intensity**. The buildings sector is estimated to account for around 50 percent of final energy consumption (with residential buildings accounting for the large majority). The high share in final energy consumption makes the buildings sector a key priority for EE and carbon emission reduction. In addition, specific energy demand in residential buildings (estimated average of 210 kWh per square meter[4]) and in public buildings (estimated average of 185 kWh per square meter[5]) is substantially higher than in countries located in similar climatic zones. Reasons for the high energy intensity in the BiH buildings sector include the large share of dated buildings (more than 77 percent of public buildings were constructed prior to 1987) with poor insulation, old heating and lighting systems, and years of under-maintenance. Based on available energy audits, energy demand in the residential and public buildings sector can be cost effectively reduced by 30-60 percent.

10. **EE is a cornerstone of BiH's Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC)**. Given the high carbon intensity of its economy, EE is also critical for the country to reduce its greenhouse gas (GHG) emissions. Though its national GHG emissions represent less than 0.1 percent of global emissions, BiH, as a signatory to the Paris Agreement, demonstrated its commitment to contribute to the global effort to combat climate change. BiH submitted its NDC to the UNFCCC, committing to unconditionally reduce emissions by 2 percent before 2030 (compared to the business-as-usual scenario). This will result in a growth trend of emissions by 2030 of 18 percent instead of 20 percent compared to 1990 levels. The NDC also noted that additional emission reductions of 23 percent compared to the business-as-usual scenario could be achieved with international support. This would result in emissions 3 percent lower than 1990 levels. A significant share of GHG emission reductions are expected to be achieved through EE improvement measures.

11. **There are multiple EE benefits in the public buildings sector**. BEEP has helped to demonstrate the large energy savings potential and co-benefits associated with EE improvements in public buildings (see paragraph 2). The lifetime energy and carbon savings of the 61 retrofitted buildings under BEEP alone are estimated to be equivalent to taking 80,000 cars off the streets.[6] In addition, end-user satisfaction with indoor comfort in terms of temperature and lighting has increased substantially in both the RS and the FBiH. International experience also shows that EE investment programs targeting the public buildings sector can help catalyze markets for EE goods and services by leveraging on the social outreach capacity of public sector buildings to help create awareness and demand for EE, building market capacity of local equipment suppliers and service companies, and gradually fostering a sustainable local ESCO industry (e.g. Canada, Germany, Japan, Republic of Korea). Eventually, these are important elements for expanding and scaling-up EE efforts in the residential buildings sector.

[2] Coal-fired power plants account for around 60 percent of power generation with hydro providing the balance.
[3] World Bank, World Development Indicators.
[4] GIZ, Typology of Residential Buildings in BiH, 2016.
[5] UNDP, Typology of Public Buildings in BiH, 2017.
[6] US Environmental Protection Agency, GHG equivalencies converter, using US estimates.

12. **Unlocking the large EE benefits in the public buildings sector will require substantial investments**. In BiH, there are some 7,600 public buildings (4,419 public buildings in the FBiH and 2,908 in the RS), requiring an estimated €350-510 million in EE investments.[7] The large EE investment needs and benefits in BiH not only call for a scale-up in EE financing but will also require a transition towards sustainable financing and delivery models, which enable leveraging of public and private financing, pooling of resources, and sustaining efforts on a long-term basis.

Table 1: Summary of public buildings stock in BiH[8]

Buildings Type	Number of buildings			Floor area (m^2)	Heating demand (MWh)	Specific heating demand (kWh/m^2)
	FBiH	RS	Total*			
Kindergarten	103	64	170	122,709	27,969	228
Education	1,455	928	2,434	2,868,181	507,544	177
Health	474	276	765	939,842	181,719	193
Sport	485	265	770	505,714	148,729	294
Culture	154	216	379	686,371	166,901	243
Offices	1,576	1,011	2,755	2,495,033	403,901	162
24 hours accommodations	172	148	327	1,457,588	246,651	169
Total	**4,419**	**2,908**	**7,600**	**9,075,438**	**1,683,423**	**185**

* Total number includes public buildings located in Brcko District and within BiH-level responsibilities

13. **Since approval of the parent project, progress has been made in strengthening the enabling environment for EE**. In December 2017, the Council of Ministers has adopted the BiH Energy Efficiency Action Plan for 2016-2018, which includes an indicative energy savings target of 9 percent by 2018 (equaling around 12 PJ) and outlines the key actions to achieve this target. EE improvements in the buildings sector are expected to account for nearly 80 percent of the targeted energy savings. With the adoption of the EE Law in the RS in 2013 and in the FBiH in 2017, respectively, both entities have now dedicated EE legislation in place. While some progress has been made in drafting new or updated by-laws and rulebooks in the last couple of years, the adoption of a comprehensive secondary legislation in line with relevant EU Directives is lagging and remains yet to be completed. Since 2015, notable progress has been made in supporting implementation of EE improvements in the public sector, *inter alia* financed by local Governments, the entities' Environmental Protection and EE Funds and international development partners. For instance, the entities' Environmental Protection and EE Funds have each provided grants of around €1-1.6 million to support EE improvements in public buildings, which were partly co-financed through BEEP, end-users and/or the Green Economic Development Project supported by the United Nations Development Program (UNDP) and the Swedish International Development Cooperation Agency (SIDA). In addition, the FBiH Environmental Protection Fund has set up an EE revolving financing mechanism in 2016 in the form of a concessional credit-line[9] to finance EE projects, including in the public sector. So far, the FBiH Fund has provided interest-free loans to three public sector institutions through its credit-line. In the RS, the EE Fund is currently participating in piloting a revolving financing model under BEEP, where co-financing provided by the Fund would be repaid by the municipality on the basis of energy cost savings achieved. Combined

[7] Based on estimates from existing energy audits, results and costs observed under BEEP, and the public buildings stock in BiH.
[8] UNDP, Typology of Public Buildings in BiH, 2017.
[9] General terms of financing include: credit maturity of up to 7 years, including 6-12 months grace period and zero percent interest rate.

with results achieved under BEEP, this progress in financing, preparing and implementing EE investments in public buildings has helped to strengthen EE market capacity and to build awareness and demand for EE investments.

14. **Despite recent progress, important barriers remain yet to be addressed for scaling-up EE investments in the public buildings sector**. Some of the prevailing key barriers include:

- *Policy and regulatory barriers*: overall, the institutional, policy and regulatory basis for EE remains fragmented and will require further improvements to scale-up EE and effectively implement the EE laws. Moreover, EE improvements in the public buildings sector are *inter alia* hampered by limitations on retention of achieved energy cost savings to repay for EE investments, restrictions on long-term contracting and public procurement constraining the conclusion of ESCO or PPP arrangements, and generally low energy prices impacting the financial viability of investments;
- *Financial barriers:* access to commercial financing by public entities remains constrained *inter alia* due to: borrowing limitations; lack of creditworthiness and inability to collateralize loans for a large segment of public entities; relatively high transaction costs associated with dispersed and small-scale EE investments; unattractive financing terms offered by commercial banks (e.g. relatively short loan maturities); and lack of private sector investors, such as ESCOs, with adequate balance sheets to pre-finance EE projects. In addition, public EE financing instruments offered remain limited in their scalability and sustainability for a number of reasons, including: (i) grant financing to end-users with limited leverage and replication; (ii) debt financing lacking either a revolving element or being provided through commercial banks with only a small number of public entities able to meet financial appraisal criteria and develop bankable EE projects; (iii) limited number of programs offering full-service EE packages, which combine financing with technical preparation and implementation support; and (iv) ad-hoc coordination of projects and programs.
- *Implementation capacity constraints:* despite notable progress in implementing EE projects, important capacity constraints continue to present a challenge to scaling-up EE improvements; these include *inter alia* the following: the local energy service market remains highly fragmented and relatively small; besides a limited number of pilots, there is no experience in performance-based contracting; public entities have limited knowledge and capacity in preparing and implementing EE projects; actual energy savings are impacted by behavioral inertia (e.g. suboptimal ventilation and heating practices); and the entities' Environmental Protection and EE Funds offer EE financing but have limited technical and operational capacity in providing full-service EE packages to help address capacity constraints faced by public entities.

15. **The proposed AF focuses on strengthening sustainability and scalability of BEEP**. To this end, the proposed AF design builds on lessons learned under BEEP (see paragraph 6) and adds the following key aspects to help enhance scalability and sustainability: (i) introducing a strategic shift away from EE grant financing towards scalable and sustainable financing schemes by systematically using revolving financing models that increase leverage and demonstrate the concept of repaying EE investments based on energy cost savings; (ii) strengthening the involvement of the entities' Environmental Protection and EE Funds to build long-term capacity in operating sustainable EE financing and delivery models and facilitate the replication of revolving financing schemes; (iii) supporting the development of arrangements that would allow to sustain EE investments beyond the project; (iv) supporting improvements of the enabling environment to facilitate the transition towards more commercial financing solutions (see paragraph 16); and (v) leveraging EE financing provided by other development partners (see paragraph 17). The targeted

trajectory towards a framework for sustainable and scalable EE investment in the public buildings sector is summarized in Table 2.

Table 2: Trajectory towards a sustainable and scalable EE investment framework

Phase	Objectives
BEEP (ongoing)	• Build local implementation capacity of private and public stakeholders in preparing and implementing EE investments • Demonstrate the benefits of EE improvements and build public awareness on the importance of EE • Pilot alternative financing models, including co-financing, reinvestments of project reflows (VAT) and partial repayment of EE investment costs
BEEP AF (proposed)	• Implement and demonstrate revolving financing models that use energy cost savings achieved to recover part of the investment costs • Support the replication of scalable EE financing models by the RS EE Fund and other development partners • Strengthen technical and operational capacities of the entities' Environmental Protection and EE Funds to offer a range of sustainable financing and implementation services[10] • Support the development of institutional, financing and operational arrangements and capacities that enable scaling-up of EE financing beyond BEEP • Mobilize EE financing by other local and international partners in a coordinated manner to increase scale and impact (see paragraph 16) • Introduce policy, legislative and regulatory changes to support transition to commercial financing models and improve enabling environment for EE • Pilot simple ESCO models to test performance-based contracting options and build the local ESCO market • Support development of pilot PPP arrangements to finance EE improvements • Strengthen capacities of local energy service providers (including private banks, ESCOs, consultancy companies and construction firms) and public entities to prepare, implement and invest in EE in a sustainable and cost-effective way; increase public awareness on EE
Future phases (after project)	• Operationalize and implement public ESCOs and/or revolving EE Funds operated by sustainable institutions anchored in country framework • Diversify and expand models of financing to increase leverage • Mobilize commercial financing for EE through private ESCOs and other commercial financing sources (e.g. as part of PPP arrangements) by offering guarantees, forfaiting, ESCO financing and standardized PPP structures

16. **Leveraging EE financing provided by other partners**. The proposed AF will help to enhance impact and leverage resources from other development partners, including:

- *Green Climate Fund (GCF):* GCF has approved in October 2017 a US$17 million UNDP- and Recipient-executed grant to support EE improvements in the public buildings sector.[11] BEEP AF will be critical to help unlock part of the Recipient-executed grant (US$10 million), which is contingent upon

[10] This will be done through on-the-job training, partial channeling of project reflows to the RS EE Fund and continued technical assistance to help strengthen financial and other services offered.
[11] The project is expected to become effective in Fall 2018.

mobilization of EE financing by the entity Governments and has been designed to complement BEEP AF in the following ways: (i) up to US$7.2 million of the grant is intended to be implemented by the Ministries of Physical Planning through the BEEP PIU structure to leverage AF resources (using World Bank procurement regulations and the project's safeguards documents); and (ii) GCF grants focus on higher cost measures with investment payback periods above 8 years (original threshold under BEEP). In addition, the UNDP-financed part involves support for detailed energy audits, which is expected to be closely coordinated with BEEP to match selected buildings under the AF.

- *Kreditanstalt für Wiederaufbau (KfW):* KfW plans to provide €6-10 million grants to support EE investments in public buildings in the RS (with a follow-up phase potentially covering also the FBiH). Although the financing is provided on a grant-basis, KfW has agreed to support the use of similar revolving financing models as proposed under the BEEP AF. KfW is further considering providing its financing either through the RS EE Fund or the BEEP PIU structure, which will help to build synergies and enhance sustainability.

17. **Enabling private sector solutions for scaling-up EE investments**. In view of the large investment needs in the BiH buildings sector, enabling and mobilizing commercial financing solutions is a key objective of the path towards sustainable EE financing (Table 2) and a *sine qua non* to achieve sufficient scale. In order to help unlock private sector financing for EE, the proposed project integrates the following enabling elements: (i) providing targeted technical assistance to help address key policy, legislative and regulatory constraints that are hampering the mobilization and implementation of private sector financing; key barriers were identified as part of the first phase of the ongoing Issues and Options Studies conducted in each entity (see paragraph 4) and recommendations included for instance support to improve the existing PPP laws, enable multi-year contracting for public entities and facilitate retention of energy cost savings to be used for investment repayments; (ii) continuing support for developing and diversifying sustainable and scalable EE financing and delivery models that help to leverage both public and private sector financing, such as private ESCO financing instruments (e.g. forfeiting and guarantees) or PPP arrangements; for this purpose, follow-up technical assistance will be provided to the ongoing Issues and Options Study to develop the detailed design of such instruments; (iii) piloting of simple ESCO models (fist-time ESCO for comprehensive EE retrofits) in a number of selected public buildings to help create market capacity and experience in implementing performance-based contracts for EE; (iv) building capacity of private stakeholders on EE financing and implementation; and (v) helping to develop a PPP project pipeline by preparing technical and contractual model templates. Enabling and mobilizing private sector solutions for EE improvements is also recognized in the Country Partnership Framework for BiH and is an integral part of the Government's strategy, as reflected in the National Energy Efficiency Action Plan and the respective EE laws.

II. DESCRIPTION OF ADDITIONAL FINANCING

18. **Proposed Financing**. The proposed AF will be supported by an IBRD loan of €27.3 (US$32 million equivalent), with 60 percent of the proposed loan to be provided to the FBiH (around €16.4 million) and 40 percent (around €10.9 million) to the RS, respectively. Project financing will be complemented by co-financing provided by the entity Governments from two sources: (i) project reflows generated through the revolving financing models introduced for EE investments and reinvested in the form of joint co-financing with BEEP AF resources; and (ii) Value Added Tax (VAT) refunds on BEEP AF expenses, which will also be reinvested in the form of joint co-financing to the project. The total amount of available co-financing from

these two sources is estimated to amount to €7.95 million.

19. **Key changes introduced**. The proposed key changes are targeted at strengthening the sustainability and scalability of the project, and reflect lessons learned and progress achieved under the parent project. Specific changes are further described below and in section VI and VII, *inter alia* involving: (i) restructuring of the project development objective and results framework; as well as (ii) financing and operational mechanisms used to improve EE in public buildings.

A. PDO and contribution to higher level objectives

20. **Proposed changes to the PDO**. With the successful demonstration of EE benefits under the initial phase of BEEP, the proposed AF aims to scale-up EE improvements in public sector buildings and the operationalization of scalable EE financing models. The PDO is proposed to reflect this shift and to be restructured as follows: *'The PDO is to improve energy efficiency in public sector buildings, and to support the development and implementation of scalable energy efficiency financing models.'*

21. **Alignment with the BiH Country Partnership Framework (CPF) FY17-20**. The current CPF highlights the efficient use of energy as one of the key challenges the country is facing and includes improvements in EE as one of its objectives. Accordingly, the proposed AF operation is aligned with and directly contributes to the CPF by improving EE in public sector buildings.

22. **Contribution to other objectives**. The proposed AF also supports the World Bank's goal in reducing poverty and promoting shared prosperity in a sustainable manner notably by reducing the wasteful use of energy and associated GHG emissions; improving the learning, recovery and working environment in retrofitted public facilities for vulnerable population segments (e.g. children and patients); and fostering the creation of green jobs and markets. The proposed AF will further contribute to the Sustainable Energy for All Initiative, which calls for a doubling of the global rate of EE improvements, as well as the World Bank's Climate Change Action Plan in ECA for 2017-2020.

B. Project Components

23. The project components and activities proposed to be supported under the AF build on the scope and results achieved under the parent project as described below and further detailed in updated Project Operations Manuals (OMs).

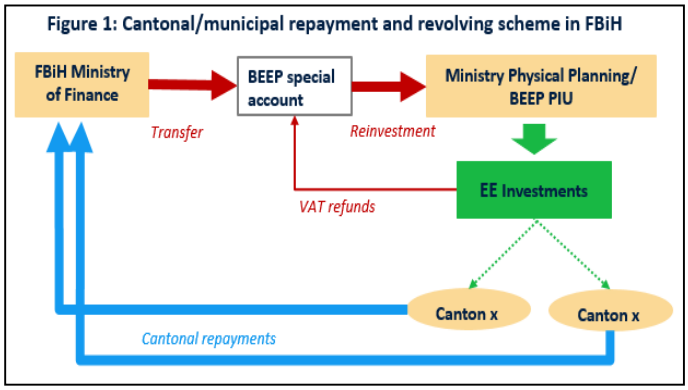
24. **COMPONENT 1: EE Investments in Public Facilities (estimated costs of €31.4 million, including €23.4 million IBRD financing and estimated €7.9 million Government co-financing through the revolving financing models)**. This component will continue supporting EE improvements in selected public buildings, including related civil works, goods and services.

25. **Main changes under Component 1**. The process for selecting public buildings and implementing EE investments will remain similar as under BEEP (see Annex 1). The main change relates to the development and implementation of revolving financing models for EE investments supported under the project. This represents an important shift from piloting of alternative financing arrangements under BEEP towards the systematic use of scalable EE financing models under the AF, which will enable funds to revolve, leverage

AF resources, demonstrate the concept of using energy cost savings for partial repayment of investment costs, and support a gradual transition towards more commercial financing options. In addition, simple ESCO models will be piloted for a few EE investments supported under the proposed AF to help develop the local ESCO market.

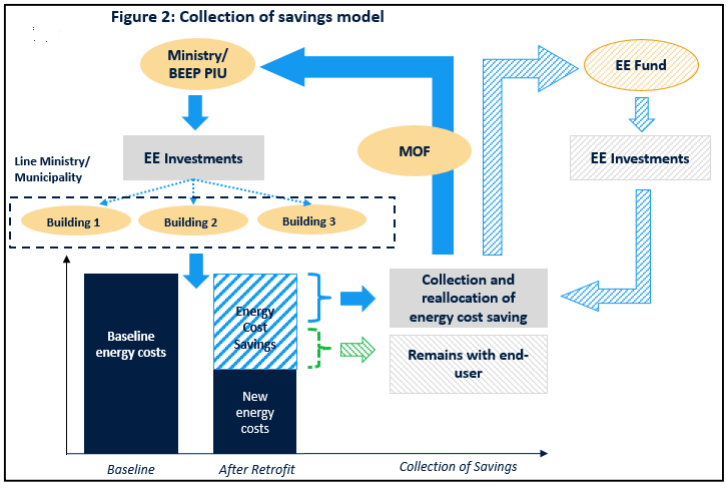
26. **Revolving financing model in the FBiH (see Figure 1)**. As per arrangements under BEEP, participating cantons and municipalities would continue to repay the costs of EE improvements in municipal/ cantonal buildings to the FBiH Ministry of Finance over a 10-year period.[12] As part of the revolving financing model, the semi-annual repayments from local Governments ('project reflows') for EE investments supported under both BEEP and its AF will be reinvested in the form of joint co-financing with loan proceeds to scale-up EE improvements in cantonal/ municipal buildings. The project reflows will be allocated as part of the annual budget process to the BEEP special account set-up by the Government in 2015 (separate from the IDA/IBRD designated accounts), and be complemented by recurrent VAT refunds on eligible project expenses. The preparation and implementation of EE investments supported under the AF, including those jointly co-financed from other sources, would continue to be managed through the PIU under the FBiH Ministry of Physical Planning. For the duration of the project, the revolving financing model in the FBiH is estimated to generate an additional €6.5 million in available co-financing to BEEP AF resources. Along with the loan proceeds allocated to Component 1 (€14.2) for FBiH, this is estimated to enable financing of EE retrofits in about 61 public buildings.

Figure 1: Cantonal/municipal repayment and revolving scheme in FBiH



27. **Revolving financing model in the RS (see Figure 2)**. As part of the revolving financing model in the RS, 50 percent of the estimated annual energy cost savings[13] in retrofitted buildings under the AF would be captured for 10-15 years or until 50 percent[14] of the investment costs supported under BEEP AF are recovered, whichever comes first. The captured energy cost savings would be reinvested to scale-up EE improvements in public buildings ('project reflows') in two different ways, depending on budget responsibilities for the retrofitted

Figure 2: Collection of savings model



[12] The terms and conditions, including the repayment schedule, are stipulated in Subsidiary Financing Agreements concluded between the local self-Governments and the FBiH Ministry of Finance.
[13] Using the energy cost savings estimates provided in detailed energy audits.
[14] Reasons for capturing 50 percent of the estimated energy cost savings is based on the following considerations: many of the buildings are under-heated resulting in a significant difference between actual and normative savings and impacting the accuracy with which energy cost savings can be projected; experience under BEEP has further shown that actual energy cost

buildings. First, for retrofitted buildings under the entity budget (e.g. primary schools or administrative buildings), 50 percent of annual energy cost savings will be collected through a budget capture mechanism and allocated to the RS Ministry of Spatial Planning as part of the regular budget process to provide joint co-financing to BEEP AF. These project reflows will be complemented by recurrent VAT refunds on eligible project expenses, and be implemented through the PIU under the RS Ministry of Spatial Planning. For the duration of the project, the revolving financing model in the RS is estimated to generate an additional €1.4 million available for joint co-financing with BEEP AF resources. Along with loan proceeds allocated to Component 1 (€9.2) for RS, this is estimated to enable financing of EE retrofits in about 32 public buildings.

28. Second, for retrofitted buildings under municipal budgets (e.g. kindergartens, secondary schools) and buildings with independent revenue streams (e.g. hospitals and other health care facilities), the municipality/ building administration will be required to transfer an amount equivalent to 50 percent of the estimated energy cost savings to the RS EE Fund in the form of annual repayments for EE investments supported under the BEEP AF. The RS EE Fund will finance additional EE investments in public buildings using a similar revolving financing model, supported through captured energy cost savings and the Fund's own resources. While these EE investments implemented by the RS EE Fund are not considered part of the project, the revolving financing model supported under Component 1 will help to build experience and capacity to implement and replicate the model. Involving the RS EE Fund will further help to strengthen the institutional sustainability of the project independent of the BEEP PIU.

29. **Piloting of performance-based contracting models**. A performance-based contracting model for EE investments will be piloted with focus on 'entity buildings' (e.g. federal buildings in FBiH and primary schools in RS). As part of the model, a share of the payment to selected contractors would be based on performance, e.g. the achievement of a minimum energy performance class of the retrofitted building (e.g. class B), as verified through the building certificate process. This would help to support the development of the local ESCO market by testing and demonstrating a simple performance-based contracting model for EE. The design of the proposed model also builds on lessons learned from the parent project, where an ESCO pilot was developed and agreed, but not implemented due to an overly complex monitoring and verification protocol, lack of experience and capacity in net present value-based procurement for civil works, and need for careful selection of the 'pilot building' in terms of type and condition of building as well as institutional responsibilities.

30. **COMPONENT 2: Support for the Development of Scalable Financing Mechanisms and Capacity Building (estimated costs of €2.15 million IBRD financing)**. This component will build on activities implemented under BEEP and provide technical assistance aimed at: (i) supporting the development and implementation of scalable EE financing mechanisms; (ii) enhancing local market capacity and improving EE enabling environment; and (iii) strengthening public awareness on EE.

31. **Development and implementation of scalable EE financing mechanisms**. Complementing the revolving financing models implemented under Component 1, the following technical assistance activities are planned under the AF to further strengthen the development and implementation of scalable EE financing

savings are subject to a variety of factors including end-user behavior, fuel prices and heating degree days; rather than applying a complex monitoring and verification protocol, the proposed deemed savings approach combined with partial capturing of savings is meant to facilitate implementation and build consensus around the proposed model while still providing sufficient incentives to maximize energy cost savings.

mechanisms:

a) *Developing institutional and implementation arrangements that enable EE investments to be sustained beyond the project*: both entity Governments are committed to continue capturing and reinvesting project reflows from cantonal/ municipal repayments and generated energy cost savings, respectively, beyond the project. The development of arrangements that enable EE improvements to be sustained is captured in the form of a dated covenant in the AF Project Agreements. Technical assistance will be provided to help develop such arrangements by: (i) building the capacity of the entities' EE Funds to implement similar full-service EE revolving financing models, e.g. by providing technical assistance and on-the-job training opportunities to the Funds, and by channeling part of the project reflows to the RS EE Fund to facilitate operationalization of a similar revolving financing model; and (ii) supporting the development of procedures to continue operating revolving financing mechanisms beyond the project, e.g. by developing institutional and implementation arrangements, template documents, operational procedures to recover EE investments on the basis of achieved energy cost savings as well as related financing terms and conditions.

b) *Addressing market barriers to scaling-up EE financing*: this will build on key barriers and financing options identified under BEEP (ongoing 'Issues and Options Studies') and provide targeted follow-up technical assistance to help address legal, regulatory and other barriers constraining sustainable and commercial financing options from being implemented (e.g. ESCO financing, PPP arrangements, Energy Service Agreements); for instance, this may involve technical assistance supporting legal and regulatory changes to facilitate the conclusion of multi-year contracts, retention and transfer of energy cost savings achieved, and/or development of pilot ESCO, Energy Service Agreement and/or PPP arrangements.

32. **Strengthening local market capacity and improving EE enabling environment**. Targeted technical assistance and training activities will continue to be provided on an as-needed-basis. Trainings delivered under the proposed AF will specifically provide and promote training opportunities for women (see further description in paragraph 85). Key areas for technical assistance are expected to focus on:

a) Enhancing local market capacity in identifying, preparing, financing, implementing and maintaining EE investments; e.g. this may involve technical training to local service providers to share lessons learned under the project; training and capacity building on EE and contract management to Ministries, local Governments and/or beneficiaries (building administrations); and training to building end-users (e.g. building janitors and energy managers) to ensure adequate O&M of retrofitted buildings and systems;

b) Supporting the enabling environment for EE by providing technical assistance to develop and/or update secondary EE legislation and rulebooks, as needed (especially in the FBiH);

c) Strengthening information management systems for public buildings by supporting technical assistance targeting improved functionality and interlinkages of the existing building database, e.g. in the form of: (i) follow-up support[15] for the development and programming of a software that would allow to establish an integrated database platform managed by the RS EE Fund; (ii) operationalization of the EE information system for public buildings managed by the FBiH Ministry of Physical Planning; and/or (iii) training to end-user to populate and effectively use the database.

[15] Under BEEP, the review of the existing EE and building database managed by the RS EE Fund is currently being assessed to identify potential areas for improvements to enhance the functionality and interlinkage of existing software modules.

33. **Enhancing public awareness on EE**. In order to continue enhancing awareness and understanding of EE, information, education and promotion activities will continue to be conducted under BEEP AF; this will involve disseminating project results and benefits through various media channels and the project websites, enhancing public participation in implementation of the project (e.g. social media, crowd-sourcing features on the project websites), and conducting awareness raising and outreach campaigns on EE benefits in retrofitted facilities, local communities and/or the broader public. Communications activities will be carried out in a gender-sensitive manner and include special outreach to women where appropriate. The increase in women's awareness of EE, captured by targeted questions in the beneficiary survey, will also be tracked as part of the project's monitoring and evaluation framework.

34. **COMPONENT 3: Project Management (estimated costs of €1.8 million, including €1.61 million IBRD financing and €0.19 million Government in-kind contribution)**. This component will continue providing support for effective implementation and management of the AF, including PIU staff; project-related operating costs and PIU trainings; and annual audits of project accounts. The PIUs are composed of the following Ministry staff and consultants: (i) in the FBiH: Project Ministry focal point, PIU Coordinator, three technical experts, financial management (FM) specialist, procurement specialist, contract management specialist and administrative support; and (ii) in the RS: Project Manager (Ministry staff), two technical experts, FM manager (Ministry staff), FM specialist, procurement specialist, operations officer, communications specialist, and EE financing specialist.

Table 3: Summary of Project Components and Costs under BEEP and its AF (€ million)

	BEEP	**AF**			**Total**
	IDA*	IBRD	Revolving Reflows**	Total AF	BEEP and AF
Component 1: EE Investments in Public Facilities	**23.33**	**23.45**	**7.95**	**31.4**	**54.72**
FBiH	14.00	14.21	6.51	20.72	34.71
RS	9.33	9.24	1.44	10.68	20.01
Component 2: Capacity Building	**2.31**	**2.15**		**2.15**	**4.46**
FBiH	1.29	1.06		1.06	2.35
RS	1.02	1.08		1.08	2.11
Component 3: Project Management	**1.64**	**1.61**	**0.19*** **	**1.80**	**3.44**
FBiH	1.08	1.05	0.04***	1.1	2.18
RS	0.55	0.56	0.15***	0.71	1.26
Front end fees		0.68			
FBiH		0.41			
RS		0.27			
TOTAL	**27.28**	**27.28**	**8.14**	**35.41**	**62.69**
FBiH	16.37	16.37	6.55	22.92	39.28
RS	10.91	10.91	1.59	12.5	23.41

Note: Inconsistencies due to rounding of figures; *based on US$ equivalent amounts allocated at BEEP appraisal using current exchange rates; **include captured and reinvested repayments from local Governments and energy cost savings, respectively, as well as VAT refunds; *** entity Government in-kind contributions.

C. Changes in Results Framework

35. The results framework will be restructured to mirror the changes in PDO, reflect results and progress achieved under the parent project, and strengthen gender-related aspects. Key changes include the following:

a) PDO-level results indicators:
- *Projected lifetime energy savings (updated)*: the indicator remains unchanged but annual and end target values are updated on the basis of results achieved under BEEP and projections for the proposed AF;
- *Development and implementation of revolving financing models (new)*: this new indicator aims to track progress in transitioning from piloting of alternative financing approaches towards implementation of revolving financing models that capture and reinvest cantonal/ municipal repayments in the FBiH and achieved energy cost savings in the RS, respectively. The indicator will replace the following PDO-level results indicators under the parent project: (i) piloting of alternative contracting or financing models; and (ii) submission of a proposal on scalable EE financing models to the entity Cabinet of Ministers.

b) Intermediate results indicators:
- *Reflows generated through revolving financing models (new):* this new indicator aims to capture progress in terms of project reflows generated through the revolving financing models and reinvested to support EE improvements in public buildings;
- *Development and implementation of customized skills training for target female beneficiaries (new):* this indicator aims to monitor the progress in implementing key milestones for providing customized skills training on EE for female target groups in their academic and professional career, with a view to better equip them with relevant knowledge and skills to support their professional advancement and take advantage of green jobs. The skills gaps to be addressed through customized training will be identified through targeted market needs assessments. The indicator is broken down into year-by-year milestones. The indicator on share of female project beneficiaries is dropped from the results framework but will continue to be tracked as part of the project's monitoring and evaluation system, along with further gender data points such as the share of women as part of the total number of people trained, and the percentage of women who feel empowered to adopt EE measures in their homes as an outcome of the communication campaigns;
- *Number of subprojects completed (updated):* this indicator is updated to: (i) capture the number of subprojects (EE investments in public buildings) where civil works are completed but not necessarily commissioned;[16] and (ii) adjust annual and end target values reflective of the results achieved under BEEP;
- *Number of buildings with EU-compliant energy certification (dropped):* this indicator is dropped because all retrofitted buildings are required to have energy performance certificates;
- *Increase in end-user satisfaction (revised):* this indicator is revised to measure increase in end-user satisfaction separately for each entity and to focus monitoring and evaluation of satisfaction

[16] This is to take into account the delays in issuing energy performance certificates, which are a pre-condition for building commissioning in the RS.

on improved heating in retrofitted buildings;

- *Projected lifetime fuel savings and lifetime GHG savings (updated):* the annual and end target values for these indicators are updated to reflect progress made under BEEP, and correct conversion mistakes.

D. Changes in Implementation Arrangements

36. **Overall implementation arrangements**. The implementation arrangements under BEEP AF remain largely the same as under the parent project, i.e. in each entity, the Project Steering Committee (PSC) would continue to provide strategic guidance and oversight to the project and select the buildings (see Annex 1), the Ministries of Physical Planning remain the designated implementing entities for the project and the PIUs under the Ministries continue to be responsible for day-to-day implementation and management of the project. The project implementation arrangements, including roles and responsibilities of all key stakeholders, are further detailed in the updated OMs.

37. **Key changes in implementation arrangements**. Key changes in implementation arrangements under the AF are aimed at enabling the introduction of revolving financing models and at strengthening governance aspects of the project:

a) *Preparation of annual work plans:* to support planning and disbursement arrangements between BEEP AF and other sources of financing (including project reflows and VAT refunds), the BEEP PIUs will prepare annual works plans for review by the World Bank, outlining planned EE investments and cost estimates, available funds and planned financing/ disbursement arrangements for selected buildings to be retrofitted in the forthcoming year. The annual work plans will be submitted by mid-December every year, and be updated as needed, in consultation with the World Bank.

b) *Capturing and reinvesting project reflows:* specific implementation arrangements for capturing and reinvesting project reflows would involve the following (see Figure 3):

- *In the FBiH:* the FBiH Ministry of Finance will continue concluding Sub-Contracts with participating cantons and municipalities, stipulating the terms and conditions for the repayment of BEEP-supported investments costs (e.g. repayment and grace period, interest rates, payment schedules). In addition, the FBiH Ministry of Physical Planning will continue concluding Agreements of Understandings with each local Government for cantonal/ municipal buildings and the line Ministry for federal buildings, respectively, as well as project beneficiaries (building administration), detailing the implementation arrangements and responsibilities of all key stakeholders involved.

  The repayments (without interest rates) for cantonal/ municipal buildings retrofitted under BEEP and its AF will be allocated as part of the regular budget process at the beginning of each year to the BEEP special account opened in 2015 (separate from the designated accounts for IDA/IBRD loan proceeds). This means that the FBiH Ministry of Physical Planning will include in its annual budget request an amount equivalent to the cumulative cantonal/ municipal repayments for the forthcoming year. On the basis of the annual budget to be approved by the FBiH Parliament, the FBiH Ministry of Finance will then allocate the cumulative repayments for co-financing purposes to the BEEP special account.

  The PIU under the FBiH Ministry of Physical Planning will remain responsible for preparation and implementation of EE investments in selected buildings financed through BEEP AF, project reflows

(cantonal/ municipal repayments) and VAT refunds on the basis of the agreed annual work plans.[17]

- *In the RS:* the implementation arrangements in the RS for capturing and reinvesting project reflows from the revolving financing model depend on the type of building retrofitted.

  i. *For selected public buildings under the entity budget* (e.g. primary schools, administrative buildings and select social facilities), the RS Ministry of Spatial Planning will arrange for implementation agreements with the responsible line Ministry and the project beneficiary, which detail the implementation and financing arrangements (including terms and conditions for capturing 50 percent of the estimated energy cost savings in each facility for a duration between 10-15 years[18] or until 50 percent of the investment costs are recovered, whichever comes first) through a central budget capture mechanism. This means that the RS Ministry of Spatial Planning will include in its annual budget request an amount equivalent to 50 percent of the estimated cumulative annual energy cost savings achieved for allocation in the forthcoming year. On the basis of the annual budget to be approved by the RS Parliament, the RS Ministry of Finance will then allocate this amount for co-financing purposes to a special budget line item under the RS Ministry of Spatial Planning.

  The PIU under the RS Ministry of Spatial Planning will remain responsible for preparation and implementation of EE investments in selected buildings financed from BEEP AF, captured energy cost savings from retrofitted entity buildings and VAT refunds on the basis of the agreed annual work plans.[19]

  ii. *For selected buildings financed through the municipal budget* (e.g. kindergartens, secondary schools) or with *independent revenue streams* (e.g. universities, hospitals): the RS Ministry of Spatial Planning, the RS EE Fund, the municipality (as relevant) and the project beneficiary (building administration) will conclude an implementation agreement stipulating the implementation arrangements, financing obligations and responsibilities of all key stakeholders involved. The BEEP PIU will remain responsible to manage preparation, implementation and supervision of EE investments in these buildings but not for managing related project reflows.

  iii. *Implementation arrangement between RS Ministry of Spatial Planning and the RS EE Fund:* the arrangement between the RS Ministry of Spatial Planning as EE investor and the RS EE Fund as partial re-investor of project reflows will be stipulated in a Government decision.

c) *Strengthening Governance and Accountability actions:* to ensure good governance, accountability and transparency under the project, a Governance and Accountability Action Plan (GAAP) has been developed and agreed as part of the appraisal of the proposed AF, and will be applied to both BEEP and the proposed AF. Key actions focus on strengthening accountability of the decision-making

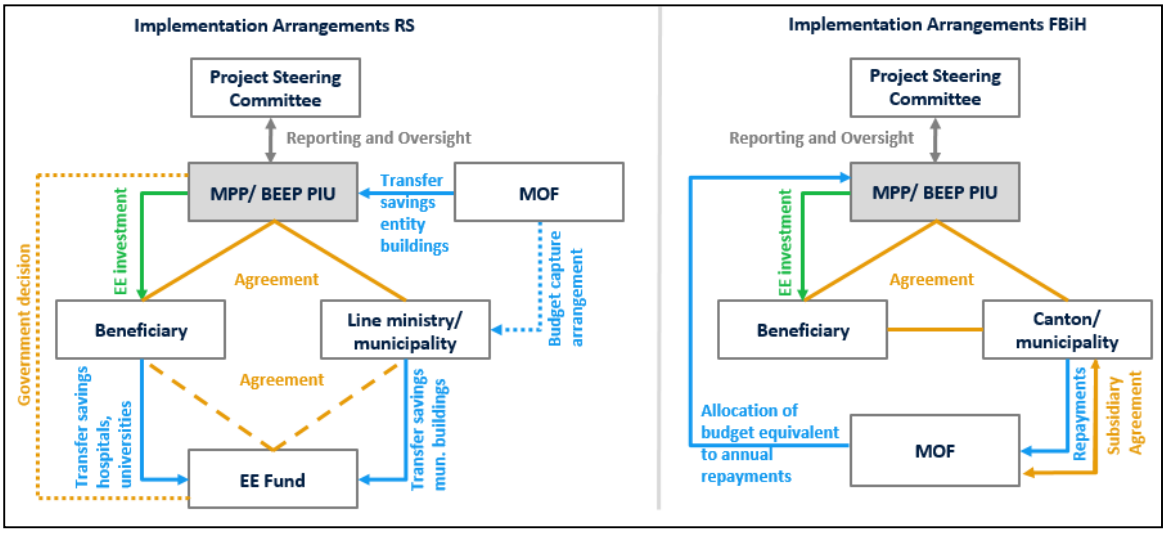
[17] Project reflows and VAT refunds for civil works in cantonal/ municipal buildings would be rechanneled to co-finance EE investments in cantonal/ municipal buildings. Costs related to the preparation and supervision of EE investments as well as project management costs will be financed out of the IBRD loan proceeds without repayment obligations from participating cantons or municipalities.

[18] For buildings in Group A, the maximum repayment period is set at 10 years and for buildings in Group B, the maximum repayment period is set at 15 years, or until 50 percent of the BEEP investment costs are recovered, whichever comes first. See further details regarding Group A and B buildings in Annex 1.

[19] The co-financing through project reflows and VAT refunds will be provided for civil works in selected buildings, while technical preparation and supervision services as well as project management costs will be covered mainly through IBRD loan proceeds.

process throughout implementation, enhancing transparency through proactive public disclosure of project information, and ensuring public participation by facilitating citizen engagement and strengthening the grievance redress mechanism of the project. In the FBiH, the GAAP was also complemented by the adoption of a protocol regulating the arrangements between the Ministry of Physical Planning and the PIU ('PIU protocol') in terms of responsibilities, reporting, communication and performance management. A more detailed description of the agreed GAAP for BEEP and its AF is included in Annex 2.

Figure 3: Summary of implementation arrangements for revolving financing models



* MOF: Ministry of Finance; MPP: Ministry of Physical Planning

III. KEY RISKS

38. The overall risk rating for the proposed AF is increased to substantial, given the substantial risks pertaining to the areas highlighted below. All other risks are rated low or moderate as per the Systematic Operations Risk-Rating Tool (SORT) included in Section VII.

39. **Political and Governance**. Political risks are assessed to be high primarily due to the forthcoming elections, which may impact the proposed AF (e.g. delays in project effectiveness are expected; changes in key decision-makers at the entity and local level may impact demand and commitment to EE) and increased risks associated with the cantonal/ municipal repayment scheme for EE investments (e.g. decrease and/or delays in demand from local Governments to borrow for EE investments). Governance risks are also assessed to be substantial, taking into account the possible risks of fraud and corruption in the construction sector and the inherent complexity of managing a project that involves various entity-level and local stakeholders, including two implementing entities and PIUs, relevant line Ministries as well as local Governments and beneficiaries. To mitigate political and governance risks, the following key instruments will be deployed: (i) conducting early and proactive outreach to key project stakeholders at local level, demonstrating project benefits and building on well-established approaches under the parent project in terms of building selection, preparation and implementation processes; (ii) updated OMs, clearly describing the decision-making processes throughout implementation, and strengthening reporting requirements to

better monitor procurement and contract management-related decisions; and (iii) implementing a GAAP under the remainder of the parent project and the proposed AF to help address potential governance risks (see Annex 2).

40. **Sector strategies and policies**. Risks associated with sector strategies and policies continued to be substantial given chronic delays and challenges in developing and implementing consistent sector strategies and policies in BiH. The project aims to help address and mitigate sector strategy and policy risks by: (i) providing technical assistance to help strengthen the enabling legal and regulatory framework for EE, including the development of secondary legislation to the EE Law in FBiH; and (ii) supporting the implementation of the BiH EE Action Plan for the public sector.

41. **Technical design of project**. The technical design of the project is assessed to be substantial due to the introduction of revolving financing models in each entity, which increases the complexity of the buildings selection and preparation process, and will require project reflows to be approved on an annual basis as part of the entities' budgeting process. To mitigate associated risks, updated OMs were developed and adopted, describing the implementation arrangements for the revolving financing models in both entities.

42. **Institutional capacity for implementation and sustainability**. The institutional capacity for implementation risk is assessed to be high due to recent changes of the PIU coordinator in the FBiH and one of the technical experts. To mitigate associated risks, the following measures are being undertaken: (i) recruitment and appointment of vacant FBiH PIU position based on an agreed time-bound action plan and ToRs to ensure adequate PIU capacity and qualifications satisfactory to the World Bank;[20] (ii) adopting a PIU protocol as part of the updated OM governing the arrangements between the FBiH Ministry of Physical Planning and the PIU in terms of responsibilities, reporting, communication and performance management; and (iii) continued training and technical assistance provided as part of World Bank implementation support.

43. In addition, sustainability risks are also considered to be substantial as the project's sustainability will eventually depend on the continued use of scalable financing models beyond the project and the transition to implementation arrangements that can be operated at the absence of dedicated PIUs. To ensure project sustainability, the following measures are used: (i) create implementation experience and capacity for the operation of revolving financing models under the project; (ii) support the development of implementation arrangements that allow revolving financing models to be continued beyond the project, including through technical assistance activities, project reflows channeled to the RS EE Fund, capacity building activities targeting both EE Funds and a dated covenant pertaining to the development of arrangements that enable EE investment to be sustained; and (iii) ensure close coordination with other development partners for a coordinated approach in supporting the use of sustainable and scalable financing and implementation mechanisms.

44. **Fiduciary**. While FM risks are considered moderate, procurement risks are identified as substantial, resulting in an overall substantial fiduciary risk rating. Specifically, procurement risks are identified as substantial for both country and project level. The country-level risk is based on country public procurement legislation and overall procurement environment. Project-level risk is based on identified risks under BEEP and other associated institutional risks for the country portfolio. Procurement risks are proposed to be

[20] By negotiations of the proposed BEEP AF, the FBiH PIU was fully staffed with adequate skills and qualifications and based on ToR agreed with the World Bank.

mitigated through a set of measures described in the procurement risk mapping included in the Project Procurement Strategies for Development (PPSD) developed and adopted by the Ministries of Physical Planning. Mitigation measures include but are not limited to: (i) improved procurement and contract management planning and monitoring as a result of the PPSD, Annual Work Plans and the GAAP; (ii) improved contract management based on strengthened protocols for contract management-related responsibilities and procedures; and (iii) enhanced monitoring through quarterly reporting of upcoming and ongoing procurement and contracts, post review of procurement packages during regular implementation support mission and regular site visits. Continuous capacity building for all actors involved in procurement, including internal training of Tender Committees by the PIUs and training by the Bank team on World Bank regulations remains paramount to achieve final positive outcomes. Strengthening the OMs on procurement aspects, including on governance, conflict of interest, eligibility, subcontracting, complaints handling, approvals of variation orders, contract management, etc. will further mitigate the risks.

45. **Stakeholder**. Due to the forthcoming elections resulting in potential changes of entity and local Governments as well as the introduction of revolving financing models, the stakeholder risks for the AF are increased to substantial. Main stakeholder risks relate to: (i) demand/ willingness of local Governments to borrow for EE and to capture/ transfer estimated energy cost savings, respectively, to repay for part of the EE investments planned to be supported under the AF; (ii) impact of the proposed budget capture mechanism on the budget allocation process for energy expenditures in buildings under the line Ministries in the RS; and (iii) commitment of the EE Funds to be involved in project activities so as to facilitate sustainable financing and implementation arrangements beyond the project. To mitigate these risks, the following approaches will be used: (i) timely, proactive and regular stakeholder consultations led by the Ministries of Physical Planning/ PIUs; (ii) continued communication and outreach campaigns to demonstrate the benefits of EE; and (iii) Government decision in the RS pertaining to the partnership arrangement between the project and the EE Fund.

46. **Climate Change and Disaster Risks**. Based on the climate and disaster risk screening conducted for the proposed AF, the following hazards are classified as 'high' for BiH:[21] (i) river and urban flood hazard, which means that potentially damaging and life-threatening river floods are expected to occur at least once in the next 10 years; (ii) landslide susceptibility, which means that the country has rainfall patterns, terrain slope, geology, soil, land cover and (potentially) earthquakes that make localized landslides a frequent hazard phenomenon; and (iii) wildfires, which means that there is greater than a 50 percent chance of encountering weather that could support a significant wildfire that is likely to result in both life and property loss in any given year. In addition, the earthquake hazard in BiH is classified as medium, which means that there is a 10 percent change of potentially-damaging earthquake shaking in the next 50 years. To mitigate these risks, the following approaches will be taken: (i) designs for building retrofits will have to comply with relevant local building codes and permit requirements (including fire protection and others); (ii) measures will be designed so as to take into account potential risks of flood and landslides damaging equipment and work implemented especially with respect to heating systems (e.g. elevating boiler and pellet storage rooms), and take into account potential impacts of the proposed measures on structural stability of the facility, e.g. in the case of roof replacements or reconstructions; (iii) eligibility criteria for buildings continue to include

[21] Based on the 'Think Hazard' assessment of disaster and climate risks developed by the Global Facility for Disaster Reduction and Recovery (GFDRR).

structural soundness; and (iv) should structural deficits be identified at any stage of the building preparation and implementation process that cause serious risks of collapse due to earthquakes, additional assessments will be conducted to assess required measures and associated costs.

IV. APPRAISAL SUMMARY

E. Economic and Financial Analysis

47. Economic and financial appraisal of the project was conducted through a cost-benefit analysis. Economic costs and benefits were calculated in prices of the year of conducted energy audits, exclusive of taxes. The assessment of the financial costs and benefits was done at prices adjusted by the forecast inflation rate over the assessment period of 20 years and inclusive of taxes. The project in total and at the individual building-level are considered economically and financially viable if the Net Present Value (NPV) of costs and benefits is positive and the Economic Internal Rate of Return (EIRR) and Financial Internal Rate of Return (FIRR) are higher than the respective discount rates used.

48. The stream of economic costs and benefits was discounted at the social cost of the capital, which was assumed to equal 8 percent. The choice of the social discount rate is driven by the assumption that the real GDP per capita will grow at an average annual rate of 4 percent[22] during the useful economic life of the project using the Ramsey formula for discount rate.

49. Economic and financial appraisal was conducted for:

a) The estimated total EE investments in public buildings supported under the project based on the energy audits conducted in 61 buildings retrofitted under the parent project, i.e. education and health facilities and other public buildings. The results of these energy audits were used as representative average values for EE investments in such facilities and buildings and extrapolated to the total proposed investment under the AF; and

b) Representative types of healthcare and education facilities to be financed under the project, selected among the 61 energy audits.

50. The proposed AF will finance EE upgrades in building envelops, heating and cooling systems, and lighting (see paragraph 59). The costs of these EE measures and expected energy saving are estimated based on the results of conducted energy audits, included in Table 4.

51. The economic and financial appraisal relied on the following key assumptions:

Table 4: Key assumptions of economic and financial analysis

Investment cost, without VAT, € million	22.86
Disbursement period	5 years
Economic rate of discounting	8%
Financial rate of discounting	0.70%
IBRD spread as of April 1, 2018	0.97%

[22] Source: IMF World Economic Outlook, April 2018.

Reference rate (EURIBOR), as of May 11, 2018	-0.27%
VAT	17%
Assessment period	20 years
Energy savings potential (kWh/€), using VAT inclusive investment cost	1.61
CO2 reduction potential ($kgCO_2$/kWh)	0.33

Economic analysis

52. The main quantifiable economic benefit from EE investments in public and social facilities is the economic value of energy savings. Energy savings were valued at the cost of energy, which was estimated as energy cost savings per unit of energy saved. The analysis was conducted both with and without CO_2 emission reduction benefits. The economic costs are the capital investments.

53. **GHG emission reduction**. EE measures are assumed to reduce CO_2 emissions by an average of 33kg CO_2 per kWh of energy saved. The project is estimated to result in CO_2 emission reduction of about 246,997 tons over the project assessment period. Following the recommendation of the World Bank Guidance on Shadow Price of Carbon in Economic Analysis (November 2017), the project economic NPV and EIRR were evaluated for a low and high estimate of the carbon price rebased at 2018 prices.

54. **Results**. Results of economic analysis suggest that EE investments have robust economic rates of return. The project is estimated to yield an economic NPV of €4.09 million and EIRR of 11.4 percent. The economic analysis of the project, inclusive of avoided CO_2 emission reduction benefits, yielded an economic NPV of €8.26 million and EIRR of 14.5 percent using the low estimate of the carbon price and an economic NPV of €12.41 million and EIRR of 17.4 percent using the high estimate of the carbon price. The details of the economic analysis for nine representative buildings in the FBiH and the RS as well as the total project are presented in Table 5 below. Payback period for representative buildings ranges from 2.1 years to 8.7 years with the average for the whole project being 7.4 years.

Table 5: Economic NPV and IRR of the representative buildings and the project

	Economic NPV	Economic NPV with CO2 reduction benefits (Low case)	Economic NPV with CO2 reduction benefits (High case)	EIRR	EIRR with CO2 reduction benefits (Low case)	EIRR with CO2 reduction benefits (High case)	Payback
	€	€	€	%	%	%	Years
Federation of Bosnia and Herzegovina							
Police Academy	7,710	17,893	28,049	9.8%	12.0%	14.1%	8.6
Health Center in Tomislavgrad	275,580	282,094	288,592	26.5%	26.8%	27.2%	3.7
“Rizah Odzeckic” Grammar School	86,537	195,143	303,472	19.3%	30.8%	41.6%	5.0
Primary School “March 21st”	101,327	125,052	148,716	46.8%	54.4%	61.9%	2.1
Republic of Srpska							
Health Center Banja Luka	88,029	146,530	204,882	11.3%	13.2%	15.1%	7.8
"Saint Sava" School	57,090	79,304	101,462	13.6%	15.6%	17.5%	6.8

	Economic NPV	Economic NPV with CO2 reduction benefits (Low case)	Economic NPV with CO2 reduction benefits (High case)	EIRR	EIRR with CO2 reduction benefits (Low case)	EIRR with CO2 reduction benefits (High case)	Payback
	€	€	€	%	%	%	Years
Primary school "Mladen Stojanovic"	16,156	16,967	17,776	9.6%	9.7%	9.8%	8.7
Primary School "Saint Sava" in Zvornik	322,197	387,091	451,820	16.5%	18.1%	19.5%	5.8
Main Hospital in Trebinja	391,192	490,058	588,671	21.6%	24.5%	27.3%	4.5
Total estimate	**4,123,888**	**8,330,294**	**12,523,075**	**11.4%**	**14.5%**	**17.4%**	**7.4**

55. **Sensitivity analysis**. The key parameters, which may significantly affect economic viability of EE investments, are the investment costs and the estimated energy savings. The impact of defined variation in those parameters is presented in Table 6 below. The results of the sensitivity analysis suggest that EE investments remain economically viable with up to 20 percent lower energy savings or simultaneous adverse deviation of investment cost and expected energy savings by 20 percent and 10 percent respectively.

Table 6: Sensitivity analysis of economic returns

	Base case – 0%		10%		20%	
	NPV € million	IRR, %	NPV € million	IRR, %	NPV € million	IRR, %
Exclusive of avoided CO_2 emission benefits						
Higher investment cost with base energy savings	4.09	11.4%	2.38	9.8%	0.67	8.5%
Less energy savings with base investment cost	4.09	11.4%	1.97	9.7%	-0.15	7.9%
Higher investment cost + less energy savings	4.09	11.4%	0.26	8.2%	-3.58	5.3%
Inclusive of avoided CO_2 emission reduction benefits (Low estimate of carbon price)						
Higher investment cost with base energy savings	8.26	14.5%	6.54	12.8%	4.83	11.3%
Less energy savings with base investment cost	8.26	14.5%	5.72	12.6%	3.18	10.6%
Higher investment cost + less energy savings	8.26	14.5%	4.01	11.0%	-0.25	7.8%
Inclusive of avoided CO_2 emission reduction benefits (High estimate of carbon price)						
Higher investment cost with base energy savings	12.41	17.4%	10.70	15.5%	8.98	13.9%
Less energy savings with base investment cost	12.41	17.4%	9.46	15.3%	6.50	13.2%
Higher investment cost + less energy savings	12.41	17.4%	7.74	13.6%	3.08	10.1%

Financial analysis

56. The main financial benefit of the EE investments is the reduction of energy costs. The energy cost savings were valued at the cost of energy, which is estimated as energy cost savings per unit of energy saved. The financial costs and benefits was adjusted by the forecast inflation rate over the assessment period of 20 years. The financial costs are the capital investments.

57. **Results**. The financial analysis of the project yielded financial NPV of €34.30 million and FIRR of 11.41 percent. Payback period for representative buildings ranges from 2.4 years to 9.3 years with the average for the whole project being 6.7 years.

Table 7: Financial NPV and IRR of the representative buildings and the project

	Financial NPV	FIRR	Payback
	€	%	years
Federation of Bosnia and Herzegovina			
Police Academy	89,831	9.8%	9.1
Health Center in Tomislavgrad	906,356	24.8%	4.2
"Rizah Odzeckic" Grammar School	332,094	18.4%	5.5
Primary School "March 21st"	290,086	42.6%	2.4
Republic of Srpska			
Health Center Banja Luka	658,733	11.1%	8.4
"Saint Sava" School	302,441	13.3%	7.3
Primary school "Mladen Stojanovic"	205,899	9.6%	9.3
Primary School "Saint Sava" in Zvornik	1,385,239	16.0%	6.3
Main Hospital in Trebinja	1,406,913	20.5%	5.0
Total estimate	**34,623,979**	**11.1%**	**6.6**

58. **Sensitivity analysis**. The key parameters, which may significantly affect financial viability of EE investments, are the investment costs and the estimated energy savings. The impact of defined variation in those parameters is presented in the Table 8 below. The results of the sensitivity analysis suggest that even in case of significant and simultaneous adverse deviation of key input parameters, EE investments remain financially viable.

Table 8: Sensitivity analysis of financial returns

	Base case – 0%		10%		20%	
	NPV € million	IRR, %	NPV € million	IRR, %	NPV € million	IRR, %
Higher investment cost with base energy savings	34.30	11.1%	31.56	9.7%	28.82	8.4%
Less energy savings with base investment cost	34.30	11.1%	28.13	9.5%	21.96	7.8%
Higher investment cost + less energy savings	34.30	11.1%	25.39	8.2%	16.48	5.4%

F. Technical

59. EE and other building-related measures expected to be financed under the BEEP AF are similar to the current project and involve standard EE technologies and equipment with proven energy savings impact. Under BEEP, normative energy savings per building averaged around 50-60 percent. No technology risk should be incurred, and specific measures to be implemented in each building will be determined on the basis of detailed energy audits and designs. Eligible measures include but are not limited to: thermal insulation of the building envelope (e.g. insulation of walls, basements and attics; repair/replacement of external doors, roofs and windows); replacement/upgrade of hot water, heating and cooling systems (e.g. boiler upgrade/ replacements, fuel switching, balancing valves, thermostatic valves and automatic temperature controls, pipe insulation, chiller/air conditioner replacement, installation of solar water heater or heat pumps); installation of LED lighting; and other economically and technically viable EE measures. In addition, other non-EE measures are eligible (provided they don't exceed 10 percent of the investment costs at the portfolio level) to ensure reasonably full renovation and longevity of investments, while taking into account end-user priorities. Adequate implementation of civil works will be ensured by using qualified works supervision companies/ institutes, conducting frequent supervision visits by the PIUs' technical experts, and performing commissioning tests and energy audits upon completion of civil works. In order to ensure adequate O&M of the buildings and installed equipment, specific training will be provided for maintenance and energy management staff in retrofitted buildings, and O&M manuals developed and distributed for each building.

G. Financial Management

60. FM responsibilities for the proposed AF will remain with the PIUs under the Ministries for Physical Planning. There are no changes to existing FM arrangements. The FM arrangements have been assessed as satisfactory and no issues in the area of FM were identified, as confirmed during the last FM implementation support and supervision mission as well as the FM assessment conducted in June 2018.

61. The audit of financial statements for FY 2016 for BEEP was submitted timely, and such reports have been found acceptable to the Bank. The audit reports for FY 2017 were received with a slight delay but have been found acceptable. The auditors have issued unqualified audit opinions for FY 2016 and FY 2017 audit reports, and there were no deficiencies or accounting issues reported in the management recommendations letter. Acceptable quarterly financial reports are being submitted timely, and provide reliable financial information. The PIUs are adequately staffed with qualified FM Specialists, and appropriate controls and procedures have been instituted and described. The Ministries of Physical Planning maintain OMs that are periodically updated to reflect any changes in the project-related procedures.

62. Auditing and financial reporting arrangements will remain the same for the AF. The financial statements will be audited by independent auditors acceptable to the Bank and on ToRs acceptable to the Bank. The annual unconsolidated audited financial statements and audit reports will be provided to the Bank within six months of the end of each fiscal year. The audits will be conducted in accordance with International Standards on Auditing (ISA). The Borrower (BiH Ministry of Finance and Treasury) will publish the auditor's reports and unconsolidated audited financial statements on its website, two weeks after receipt of a confirmation from the World Bank that such reports had been found acceptable.

63. The PIUs will continue producing full sets of interim unaudited financial reports (IFRs) for each calendar quarter throughout the life of the project for all project components and all sources of funding. They will be due 45 days after each quarter end. The draft audit ToR and formats of quarterly IFRs were confirmed during negotiations and attached to the Minutes of Negotiations.

64. **Counterpart funding for FBIH**. The counterpart funding will be provided through two sources of funding, namely the VAT refunds that will flow back to the project, and the project reflows from loan repayments made by participating cantons and municipalities until the end of the project. The latter includes principal payments for investments supported under both the ongoing phase of BEEP and its AF, but excludes interest payments. The two sources of funding will be part of the FBiH BEEP revolving financing model, implemented during the project and intended to continue after its closure so as to continue sustaining EE investments.

65. **Counterpart funding for RS**. The counterpart funding will be provided through two sources of funding, namely the VAT refunds that will flow back to the project and the project reflows from captured energy cost savings achieved as result of the BEEP AF investments. The reflows will be realized through two possible channels: (i) reflows from captured energy cost savings in public buildings under the entity budget (e.g. primary schools) – such reflows will be allocated to the RS Ministry of Spatial Planning through the budget of RS in order to be used as counterpart-funding for the project; and (ii) reflows from estimated energy cost saving in retrofitted municipal buildings (e.g. kindergartens, secondary schools) or public buildings with independent revenues streams (e.g. health care facilities) – such reflows will be channeled to the RS EE Fund in the form of partial repayments of implemented EE investments. Since the RS EE Fund will use local procedures for procuring and spending of such reflows, this will not count towards counterpart funding. However, it is understood that the capacity of the RS EE Fund will be built through close cooperation with BEEP and funds used to support additional EE investments in public buildings applying a similar revolving financing model.

66. **Amount of counterpart funding for both FBiH and RS**. The amount of counterpart funding is expected to be zero for the period until January 2020 in the FBiH and until January 2021 in the RS, and thereafter gradually increase as VAT refunds and project reflows accumulate. The percentage for counterpart financing will be determined through annual work plans prepared by the PIUs based on reasonable estimates of the VAT refunds and savings reflows/ local loan refunds. Such annual work plans will be submitted to the Bank for approval in December each year, and regularly updated as needed.

67. **Disbursement and flow of funds arrangements**. The Borrower will open two separate segregated Designated Accounts for administering the IBRD loan in a commercial bank acceptable to the World Bank, and denominated in EUR currency. The commercial bank where the Designated Account will be opened will be determined upon project effectiveness and represents a disbursement condition. The ceiling for the Designated Account is defined in the disbursement and financial information letter (DFIL). All disbursement methods such as Direct Payment, Reimbursement, and advances stand available to the PIUs. However, in order to be able to start disbursing the IBRD loan, proceeds allocated from both IDA credits to each entity will need to be fully disbursed. However, the use of Direct Payments is authorized for both the IDA original credits and the IBRD AF loan in parallel if needed, and as an alternative to the use of advances. The supporting documents accompanying withdrawal applications will be either full documentation for direct payments and Statements of Expenditures (SoEs) for other disbursement methods. The disbursement percentages will be 100 percent at the beginning of the project and until January 2020 and January 2021,

respectively, after which the disbursement percentages will change depending on the availability of VAT refunds and project reflows as per the agreed annual work plans.

68. **Retroactive financing**. No withdrawal shall be made for payments made prior to the date of the Loan Agreement, except for withdrawals up to an aggregate amount not to exceed €5 million for payments for Eligible Expenditures made on or after the date falling twelve months prior to the Signature date. No withdrawal shall be made for payments made for any expenditures until the proceeds allocated for similar expenditures in the original IDA credits have been fully disbursed or committed.

H. Procurement

69. The FBiH and RS Ministries of Physical Planning will carry out procurement for the proposed project in accordance with the World Bank's Procurement Regulations for Investment Project Financing (IPF) Borrowers 'Procurement in IPF, Goods, Works, Non-Consulting, and Consulting Services' (Procurement Regulations) dated July 2016, revised November 2017, under the 'New Procurement Framework (NPF)'; the 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants', dated October 15, 2006 and revised on July 1, 2016; and other provisions stipulated in the Financing Agreements.

70. As part of the preparation of the project, the Ministries of Physical Planning (with the support from the World Bank) prepared a PPSD, which describes how procurement activities will support project operations for the achievement of the PDO and deliver value for money.

71. The main procurement activities as defined in the PPSD under this project include EE investments of civil works as well as goods investments with required consultants services for technical preparation and supervision. Other activities include support for revolving financing models, services in training and energy certification, information and awareness campaign and other technical assistance and capacity building activities. Procurement Regulations provide many choices for the Ministries of Physical Planning to design the right approach to market.

72. The PPSD considered institutional arrangements for procurement; roles and responsibilities; thresholds for procurement methods and prior review; and the requirements for carrying out procurement. It also includes an assessment and description of BEEP implementing agency capacity for carrying out procurement and managing contract implementation, within an acceptable governance structure and accountability framework. PPSD also address issues related to market analysis of qualifications, experiences, trends, and capabilities of the market to participate in open bidding procedures on local level in response to the procurement plan.

73. The PPSD prepared for the project contains identified procurement risks, and on this basis proposes a set of mitigation measures as further described in paragraph 44 (fiduciary risks).

74. The FBiH and RS Ministries of Physical Planning will remain the implementing agencies of the AF, assuming all fiduciary (FM and procurement) responsibilities as well as responsibilities for reporting to the World Bank. The PIUs established within the Ministries will carry out the project activities, including all procurement and taking into account lessons learnt under BEEP. The procurement specialists in the PIUs

are in charge of procurement for the project.

75. Standard Procurement Documents (SPDs) issued by the World Bank and ECA Sample Regional Procurement Documents (RPDs) to be used by Borrowers for IPFs include the General Procurement Notice, Specific Procurement Notice, Request for Expression of Interest, Request for Proposals (RFPs), and Request for Bids (RFBs). SPDs will be used for works, goods, consulting, and non-consulting services to be procured through international open competitive bidding and consultants selection. ECA Sample RPDs will be used for works, goods, consulting and non-consulting services to be procured through local open competitive bidding and consultants selection.

76. In addition, the implementing agencies will use Standard Bid Evaluation Forms for procurement of goods, works, and non-consulting contracts, and the Sample Form of Evaluation Report for selection of consultants as well for Evaluation of Expressions of Interest to Short List Consultants.

77. Other local procurement arrangements may be applied by the Borrower such as Request for Quotation (RFQ), Consultants Qualifications Based selection (CQ), selection of Individual Consultants (IC) and Direct Contracting (DC), if justified, all consistent with the World Bank's core procurement principles.

78. **Procurement oversight and monitoring arrangements**. Mandatory thresholds for prior review for the proposed project are based on procurement risk levels of the project and are included in the PPSD. These thresholds are also reflected in the procurement plans. The Ministries of Physical Planning have prepared initial procurement plans for 18 months and will submit them via the Systematic Tracking of Exchanges in Procurement (STEP) for the Bank's approval. For contracts to be awarded using Direct Selection, the Borrower shall submit to the Bank for its review and 'no-objection', a sufficiently detailed justification, before inviting the firm to negotiations. Irrespective of the value of the contracts, all ToRs shall be prior reviewed by the Bank's technical team. Contracts not subject to prior review, shall be post reviewed every year in ration of 20 percent.

I. Social (including Safeguards)

79. **Social Safeguards**. Overall, the EE investments will have positive social impacts by helping reduce health hazards within retrofitted buildings through improving indoor air conditions, increasing comfort levels in terms of lighting and temperature, and helping to create green jobs. Like under the previous phase of the project, social safeguards on involuntary resettlement and land acquisition will not be triggered as all EE retrofits will take place within the existing footprints of the buildings and all works will be conducted on publicly owned land. The PIUs will ensure that no acquisition of private land is needed for any of the shortlisted buildings to be retrofitted, using the screening criteria included in the Environmental Management Framework (EMF) for the project.

80. **Social benefits**. The ongoing phase of BEEP has demonstrated the numerous social benefits that can be derived from EE retrofits in public buildings. The first and most obvious benefit is the enhanced comfort resulting from the EE retrofits. BEEP's social monitoring and evaluation reports highlighted that, in FBH, only 28 percent of respondents were 'very satisfied' with heating during the winter season prior to the retrofitting works. Following the retrofitting works, the percentage of respondents who were 'very satisfied' with the heating increased to 62 percent. Similar results were reported in RS: prior to the retrofitting works,

only 34 percent of respondents were 'satisfied' or 'very satisfied' with heating. This figure increased to 95 percent after the retrofits. Significant improvements also took place regarding end-user satisfaction with the quality of lighting, wall insulation and joinery. An additional human benefit is the positive impact of EE upgrades on end-users' health. With public servants, students, pupils, medical staff and patients tending to spend more and more time indoors, well-ventilated, energy efficient buildings with adequate temperatures and better air quality can reduce the likelihood of health-related absenteeism and problems. Beyond the positive health impact, BEEP beneficiaries reported that the improved comfort levels also led to higher productivity, motivation and performance among building users. Finally, investments in EE contribute to creating direct and indirect jobs, and to reducing the quantities of air pollutants and GHG emissions.

81. **Citizen engagement**. Building on the beneficiary surveys conducted under the parent project, social monitoring and evaluation surveys will continue to be conducted in order to measure the social impact of the implemented investment measures. The beneficiary surveys will interview end-users (e.g. patients and medical staff for hospitals; civil servants for public administration buildings; school children and students for schools and universities) prior to and after the EE retrofits regarding their satisfaction with specific EE-related elements, such as the quality of heating, windows, lighting and air, similar to the ongoing phase of the project. The indicator 'increase in end-user satisfaction' will remain but be revised in order to: (i) track separately progress in the FBiH and the RS to account for different sample sizes used; and (ii) focus on increase in satisfaction specifically relating to heating which is usually the most direct impact felt by end-users, simpler to assess and common across all retrofitted buildings (unlike lighting, which is not upgraded in all buildings). Surveys should aim for an equal number of female and male respondents, and results will be disaggregated by gender and social group to monitor possible differences in knowledge, attitude and opinions related to EE. Citizen-oriented design will be ensured through: (i) inclusive consultations held between the PIUs, contractors and management of the selected buildings, which will give the users of the facilities a chance to voice their preferences regarding specific aspects of the reconstruction works (e.g. color of the façade, etc.); (ii) the inclusion of 10 percent financing for non-EE measures *inter alia* to accommodate end-user feedback and preferences on other measures to enhance the renovation impacts (e.g. painting of facilities, access to buildings, etc.); (iii) regular consultations prior and during implementation of civil works between the PIU, contractors and management of the selected buildings on how to limit the disruption of the usual activities in the building; and (iv) enhanced public participation channels of the project, e.g. by adding crowd-sourcing features on the project's websites and encouraging the public to upload real-time pictures of ongoing civil works and submitting questions/ comments. A designated staff in the PIUs will be responsible for monitoring and responding to reactions, comments, questions and pictures submitted, as necessary.

82. **Communication and awareness**. Communication campaigns will also continue to raise the public's awareness of the benefits of EE, and communication plans shall include showcasing results of the social monitoring surveys as well as specific outreach activities towards women.

83. **Grievance Redress Mechanism (GRM)**. The mechanisms for handling possible grievances linked to the EE retrofits will be strengthened for the remainder of BEEP and its AF and involve the following: (i) widely publicized and easy accessible channels to submit grievances, including systematic disclosure of contact details of the contractors and PIUs on project sites, as defined by the EMF, and crowd-sourcing project website features; (ii) development of a detailed protocol for handling grievances and complaints, including a clear non-retaliation information policy; (iii) appointment of a designated staff in the PIUs for logging,

filing, and monitoring all written and oral complaints received (including during supervision visits); (iv) inclusion of grievance log and complaint 'case summary' in progress reports submitted to the Bank and the PSC; and (v) publication of semi-annual reports on complaints received and addressed on the project website.

84. **Gender**. The project aims to help address the gender gap that exists in terms of knowledge and skills related to EE, which is one of the elements that limits female labor force participation in the energy sector. In BiH, female labor force participation is significantly lower than male. In 2018, females represent only 39 percent of the total labor force in BiH. The World Bank CPF for the period FY16-FY20 highlights that "gender gaps in the labor market persist and are estimated to result in a 16 percent loss in gross national income". The same report notes that "women's employment levels trail men's at all ages, and women face unequal opportunities due to social norms concerning the type of work and level of managerial responsibility considered suitable for women". Women also have more limited "access to additional training and re-training"[23] and the sectors of energy, engineering, manufacturing and construction are traditionally male-dominated. This is further corroborated by a report commissioned by the European Bank for Reconstruction and Development (EBRD), noting that women in the Western Balkans "are 49 percent less likely to have access to training [than men]".[24] At the same time, as emphasized by the World Bank Group Gender Strategy 2016-2023, "opportunities in the green economy have the potential to increase economic possibilities for women. Particularly in newer industries (…), potential exists to break long-standing occupational sex segregation through attention to (…) technical training". While there are several contributing factors to the gender employment gap in the energy sector, unequal capacities built and skills developed in technical areas, including EE, is one of the aspects.

85. In line with this observation, the project seeks to give women the opportunity to develop relevant skills to take advantage of emerging job opportunities in the field of EE. To encourage women's participation and career progression in the EE sector, the project will provide targeted trainings to equip women with adequate knowledge and skills to seek employment in the EE sector. The training will be targeted and tailored to two different groups: (i) high schools and university students; and (ii) professional women seeking employment in EE-related sectors. The curricula for the training, especially for university students and professional women, will be based on a market needs assessment of skills gaps and needs among relevant companies and institutes (e.g. energy audit, design and construction companies, engineering faculties and consultancy firms, etc.), drawing on the market analysis conducted as part of the PPSDs The provision of customized training to women and the involvement of firms in the training content will reduce the risk of a widening skills gap and contribute to removing constraints for more and better jobs for women in the EE sector. To ensure that the project is following the key milestones for providing customized skills training to female target groups, the results framework includes an indicator on the "development and implementation of customized skills training for target female beneficiaries", broken down into key milestones in line with the actions/approach description above and as reflected in the results framework. It is planned that at least 150 target women will be trained under the project with at least 75 percent of trained women being satisfied with skills acquired. Providing training to 150 women is ambitious and signals a clear commitment given that a total of around 190 people were trained under the parent project so far and less

[23] United States Agency for International Development (USAID) Gender analysis report for BiH 2016.
[24] EBRD, Sanfey, P. and Milatovic, J, 2018. The Western Balkans in transition: diagnosing the constraints on the path to a sustainable market economy.

than half were women.[25] The share of female-to-male training participants throughout the AF will be monitored. In addition, as part of the communication activities supported under the proposed AF, the option of organizing 'women in energy' awards will be considered when developing the communications strategy, so as to help raise women's profiles and professional achievements in the energy sector, create role models and help to shift perception and social norms that may also constrain women's participation in the labor market.

86. The project will also seek to ensure that women are well educated about the benefits and opportunities linked to EE. As highlighted in a 2016 report by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), there are "too few people, including few women, who understand the direct impact of energy and energy inefficiency on them, and who know how to act on this fact in concrete terms" in the South-East Europe region. The social monitoring surveys in FBiH found that women's awareness of EE was on average 4 to 8 percentage points lower than for men. Similarly, the social monitoring survey report in RS notes that "among those who reported not knowing what the term 'energy efficiency' means, there was more females than males". This information asymmetry limits the transformational impact that projects with high demonstration effects like BEEP may have. Given that women spend more time on average at home and are often in a position to influence household purchases, providing them with a sufficient level of information about EE can empower them to be real actors of change regarding the decision to make energy efficient investments or acquire energy efficient equipment. Therefore, the awareness raising and communication campaigns will be carried out in such a way that they effectively reach women. The effectiveness of these actions and their tangible impact on agency and voice will be monitored through specific questions in the social monitoring and evaluation surveys, which will probe the increase in women's familiarity with EE and related outcomes at the household level, with the objective to reach a 10 percent increase in the number of women who feel empowered to adopt EE measures in their homes.

J. Environment (including Safeguards)

87. The scope of works envisaged under the AF for which environmental safeguards are applicable, as per the triggered OP 4.01 on Environmental Assessment, remain unchanged. The proposed AF will continue to support public sector buildings retrofits in order to increase the EE within the selected buildings across the country, predominantly in the health and education sectors. The scope and project boundaries under the AF will remain the same as under the parent project, including building selection process, regional coverage, project boundaries and types of works eligible for financing. No activities that would be classified as Category A are eligible for financing under BEEP and its AF. In order to minimize and mitigate any potential negative environmental impacts, all works need to be carried out in accordance with the EMF and template Environmental Management Plans (EMPs) have been prepared. The EMF has been disclosed with public consultations in October 2013. Both PIUs have a designated staff with environmental safeguards responsibilities, have integrated the EMPs into their standard bidding and contractual documents, and provide regular reports on EMP compliance. The PIUs' performance on safeguards in terms of screening, assessing and implementing the EMF/EMP for retrofitted buildings has been satisfactory throughout project implementation. In addition, the FBiH PIU has developed a monitoring and reporting system that serves as best practice and is shared with other PIUs as a template. All site specific EMPs are disclosed on site. The EMF is available on the project websites and continues to be applicable for the AF activities. The introduction

[25] The share of women participating in training under the parent project was not tracked and the figure is based on an approximation provided by the PIUs.

of revolving financing models and related arrangements does not result in any changes in terms of environmental and social safeguards management for the project, and the EMF will continue to be applied and implemented for all buildings retrofitted with the use of IBRD loan proceeds.

88. The actual environmental impacts anticipated under this project, and based on the defined retrofitting activities are relatively minor and are easily mitigated by the application of the measures identified in the EMF and EMP. These impacts include mostly noise and dust generation, nuisance to the regular operations of public buildings, waste management, potential chance findings in older buildings and management of potentially hazardous materials (asbestos insulation for example). The non-direct and far reaching impacts on the environment in BiH can be significant, especially when related to the public outreach and communication campaign. The campaign, as well as the completed EE retrofits can help raise awareness of both the public and private stakeholders that would lead to improved EE, more rational use of natural resources and fuel, and a better selection of fuel used for heating, helping decrease the winter-time air pollution generated through improper and inefficient combustion of fuels currently used.

K. Other Safeguard Policies (if applicable)

89. No other safeguard policies have been triggered for the parent project, nor do the activities under the AF trigger additional policies beyond OP 4.01 on Environmental Assessment.

V. WORLD BANK GRIEVANCE REDRESS

Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit *http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service*. For information on how to submit complaints to the World Bank Inspection Panel, please visit *www.inspectionpanel.org*

VI. SUMMARY TABLE OF CHANGES

	Changed	Not Changed
Project's Development Objectives	✓	
Results Framework	✓	
Components and Cost	✓	
Procurement	✓	
Implementing Agency		✓
Loan Closing Date(s)		✓
Cancellations Proposed		✓
Reallocation between Disbursement Categories		✓
Disbursements Arrangements		✓
Safeguard Policies Triggered		✓
EA category		✓
Legal Covenants		✓
Institutional Arrangements		✓
Financial Management		✓
APA Reliance		✓
Other Change(s)		✓

VII. DETAILED CHANGE(S)

PROJECT DEVELOPMENT OBJECTIVE

Current PDO

The project development objective is to demonstrate the benefits of energy efficiency improvements in public sector buildings and support the development of scalable energy efficiency financing models.

Proposed New PDO

The project development objective is to improve energy efficiency in public buildings, and to support the development and implementation of scalable energy efficiency financing models

COMPONENTS

Current Component Name	Current Cost (US$, millions)	Action	Proposed Component Name	Proposed Cost (US$, millions)
Energy Efficiency Investments in Public Facilities	27.37	Revised	Energy Efficiency Investments in Public Facilities	64.20
Support for the Development of Scalable Financing Mechanisms and Capacity Building	2.71	Revised	Support for the Development of Scalable Financing Mechanisms and Capacity Building	5.20
Project Management	1.92	Revised	Project Management	4.00
TOTAL	**32.00**			**73.40**

Expected Disbursements (in US$)

Fiscal Year	Annual	Cumulative
2014	0.00	0.00
2015	0.00	0.00
2016	2,974,830.00	2,974,830.00
2017	13,627,036.00	16,601,866.00
2018	6,213,749.00	22,815,615.00
2019	8,815,729.00	31,631,344.00
2020	9,799,769.00	41,431,113.00
2021	9,686,067.00	51,117,180.00
2022	7,086,112.00	58,203,292.00
2023	2,385,552.00	60,588,844.00
2024	3,411,156.00	64,000,000.00

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Latest ISR Rating	Current Rating
Political and Governance	Substantial	High
Macroeconomic	Low	Low
Sector Strategies and Policies	Substantial	Substantial
Technical Design of Project or Program	Moderate	Substantial
Institutional Capacity for Implementation and Sustainability	Substantial	High
Fiduciary	Substantial	Substantial
Environment and Social	Low	Low
Stakeholders	Low	Substantial
Other	Low	Low
Overall	Moderate	Substantial

LEGAL COVENANTS – Additional Financing for the Bosnia and Herzegovina Energy Efficiency Project (P165405)

Sections and Description

Section I.A.2 of Schedule 2 to the Loan Agreement (Annual Work Plan): the Borrower shall cause the Project Implementing Entities, not later than December 15 of each year during Project implementation, to prepare and submit to the Bank an Annual Work Plan (AWP) for the following year, and thereafter regularly update as needed, including, inter alia, the proposed investment plan, its related expenditures and sources of financing needed to implement the Project activities under the AWP, acceptable to the Bank.

Section I.A.3 of the Schedule to the Project Agreements (EE framework for scale-up): each Project Implementing Entity, through the entity Ministry of Physical Planning, shall, not later than December 31, 2022, define an energy efficiency investment and implementation framework that would allow to sustain and scale-up energy efficiency improvements, with contents acceptable to the Bank.

Section I.D.1 of the Schedule to the Project Agreements (Project Steering Committees): each Project Implementing Entity, through the entity Ministry of Physical Planning, shall maintain the Project Steering Committee (PSC) with a composition, roles, responsibilities and resources satisfactory to the Bank. The PSC shall review and approve the Sub-project proposals in accordance with the eligibility, selection criteria and procedures satisfactory to the Bank.

Section I.D.2 of the Schedule to the Project Agreements (Sub-project agreements or arrangements): prior to carrying out each Sub-project, each Project Implementing Entity shall, as applicable pursuant to the provisions of the OM: (a) enter, into an agreement of understanding or other adequate arrangement with the Sub-project beneficiary, under terms and conditions satisfactory to the Bank including the technical implementation arrangements and roles of Sub-project beneficiaries in the carrying out of the Sub-project; and (b) enter into an agreement (the Sub-Agreement or Sub-Contract, respectively), satisfactory to the Bank with the Sub-project beneficiary and other participating entities under terms and conditions satisfactory to the Bank including (i) the financial obligations of the

Sub-project beneficiary or any other participating party; and (ii) the Sub-project beneficiary's or participating party's obligation to comply with the relevant sections of this Agreement.

Conditions

Type	Description
Effectiveness	The execution and delivery of each Legal Agreement on behalf of the Loan Party and at least one of the Entities which is a party to such Legal Agreement have been duly authorized by all necessary actions and delivered on behalf of such party, and the relevant Legal Agreement is legally binding upon such party in accordance with its terms.
Type	Description
Disbursement	No withdrawal shall be made under Category (1) unless: the Federation Project Agreement has been executed; and the Federation Subsidiary Agreement has been executed.
Type	Description
Disbursement	No withdrawal shall be made under Category (2) unless: the RS Project Agreement has been executed; and the RS Subsidiary Agreement has been executed.

VIII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Bosnia and Herzegovina

Additional Financing for the Bosnia and Herzegovina Energy Efficiency Project

Project Development Objective(s)

The project development objective is to improve energy efficiency in public buildings, and to support the development and implementation of scalable energy efficiency financing models

Project Development Objective Indicators by Objectives/ Outcomes

Indicator Name	Baseline	Intermediate Targets									End Target
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Improving energy efficiency in public buildings											
Projected lifetime energy savings (Megawatt hour (MWh))	0.00			392,536	584,974	618,855	633,988	712,218	876,112	1,095,536	1,322,527
Action: This indicator has been Revised											
Supporting development and implementation of scalable energy efficiency financing models											
Development and implementation of scalable EE financing models (Text)	No scalable models	-	Pilot FBiH repayment scheme started	Pilot RS co-financing scheme started	Pilot RS revolving financing model implemented	Arrangements for AF revolving financing models in place	EE repayments captured and reinvested in FBiH; energy cost savings captured in RS	Implementation revolving financing models in FBiH and RS ongoing	Post-BEEP arrangements developed	Revolving financing model by RS EE Fund tested; Post-BEEP arrangements submitted for endorsement by PSC	Revolving EE financing models implemented and post-BEEP arrangements defined
Action: This indicator is New											

Indicator Name	Baseline	Intermediate Targets									End Target
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Piloting of alternative contracting or financing models (Text)	None	Issues and Options Study launched	Implementation of pilots	Implementation of pilots	Implementation of pilots						Implementation of pilots
Action: This indicator has been Marked for Deletion											
Submission of a proposal on scalable energy efficiency financing models to the entity Cabinets of Ministers (Text)	None	Issues and Options Study launched	Stakeholder consultations	PSC decision on options	Submission of proposal the entity Cabinet of Ministers						Submission of proposal to the entity Cabinets of Ministers
Action: This indicator has been Marked for Deletion											

Intermediate Results Indicators by Components

Indicator Name	Baseline	Intermediate Targets									End Target
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Component 1: EE Investments in Public Facilities											
Projected lifetime fuel savings (Mega Joules (MJ))	0.00			1,413,129,600	2,068,542,406	2,190,515,533	2,244,993,312	2,544,621,100	3,116,637,786	3,906,565,591	4,723,732,285
Action: This indicator has been Revised											

Indicator Name	Baseline	Intermediate Targets									End Target
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Lifetime GHG savings (Metric ton)	0.00			135,136	204,751	218,114	224,276	258,168	322,870	412,221	504,653
Action: This indicator has been Revised											
Number of subprojects completed (Number)	0.00		3	43	70	83	94	115	144	174	174
Action: This indicator has been Revised											
Direct project beneficiaries (Number)	0.00		100,000	400,000	751,000	757,000	758,000	765,000	778,000	795,000	814,000
Action: This indicator has been Revised											
Female beneficiaries (Percentage)	0.00	50	50	50	50	50	50	50	50	50	50
Action: This indicator has been Marked for Deletion											
Increase in end-user satisfaction in FBiH (Percentage)	0.00			21	34	34	34	34	34	34	34
Action: This indicator has been Revised											
Increase in end-user satisfaction in RS (Percentage)	0.00				55	55	55	34	34	34	34

Indicator Name	Baseline	Intermediate Targets								End Target
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Action: This indicator is New											
Component 2: Support for the Development of Scalable Financing Mechanisms and Capacity Building *(Action: This Component is New)*											
Development and implementation of customized skills training for target female beneficiaries (Text)	No customized training provided					Market survey designed and survey companies identified	Market needs assessment conducted	Female target groups identified; Training content developed	Customized skills training to at least 70 target females delivered and training surveys completed	Customized skills training to at least 80 target females delivered and training surveys completed	Customized skills training to target female groups developed and implemented with at least 75% of trained female being satisfied with skills acquired
Action: This indicator is New											
Reflows from EE repayments and captured energy cost savings (Amount(EUR))	0.00						628,114	992,118	1,056,994	1,895,837	5,248,258
Action: This indicator is New											
Number of buildings with EU-compliant energy certification (Number)	0.00	20	50	85	85						85
Action: This indicator has been Marked for Deletion											
Number of municipal energy	0.00	14	35	59	59						59

Indicator Name	Baseline	Intermediate Targets								End Target
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
managers trained (Number)											
Action: This indicator has been Marked for Deletion											

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Projected lifetime energy savings	This indicator projects lifetime energy savings directly attributable to the project, converted to MWh. The assumed lifetime is 20 years, accounted for after completion of EE retrofits in selected buildings.	Semi-annual	Energy audits, energy performance certificates	Building-specific energy audits	PIUs
Development and implementation of scalable EE financing models	This indicator aims to track progress in transitioning from piloting of alternative financing approaches (repayment and co-financing schemes) towards: (i) implementation of revolving financing models that capture and reinvest cantonal/ municipal repayments in the FBiH, and deemed energy cost savings in the RS, respectively; (ii) replication of a revolving financing model operated by the RS EE Fund; and (iii) development of post-BEEP arrangements that allow to sustain and continue scalable EE financing mechanisms.	Semi-annual	Progress reports	Documentary evidence on achieved milestones	PIUs

Piloting of alternative contracting or financing models	This indicator tracks progress in piloting of alternative contracting and financing models during the project lifetime; such modelswould include modifications to the contracting and financing models used during the first year of project implementation and could involve piloting of e.g., contracts partly tied to the achieved energy savings, budget capture, earmarking of energy cost savings achieved or co-financing requirements.	Annual	M&E system	Documentary evidence on achieved milestones	PIU
Submission of a proposal on scalable energy efficiency financing models to the entity Cabinets of Ministers	The ministerial-level PSC or the Ministry of Physical Planning submits a proposal to the entity Cabinet of Ministers on establishing and/or operationalizing entity-wide financing models that are sustainable beyond the project lifetime and scalable in the future.	Annual	M&E system	Documentary evidence on achieved milestones	PIU

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Projected lifetime fuel savings	This indicator projects lifetime fuel use that is avoided by EE measures. The assumed lifetime is 20 years, accounted for after completion of EE retrofits in selected buildings.	Semi-annual	Energy audit, energy performance certificates	Building-specific energy audits	PIUs
Lifetime GHG savings	This indicator projects lifetime GHG emissions that are avoided by EE measures supported under the project. The assumed lifetime is 20 years, accounted for after completion of EE retrofits in selected buildings.	Semi-annual	Energy audits, energy performance certificates	Building-specific energy audits	PIUs

Number of subprojects completed	This indicator measures progress in selecting and implementing subprojects.	Semi-annual	Works completion and commissioning reports	Documentary evidence on works completion	PIUs
Direct project beneficiaries	Direct beneficiaries are people or groups who directly derive benefits from EE improvements in retrofitted buildings (i.e., staff, students and school children, ambulant and stationary patients, etc.).	Semi-annual	Energy audit reports and records by public facilities	Building-specific data; for hospitals/ health care facilities, ambulant and stationary patients are accounted for	PIUs
Female beneficiaries	Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are female.	Semi-annual	Energy audits, records by public facilities	Building-specific records	PIUs
Increase in end-user satisfaction in FBiH	This indicator measures changes in end-user satisfaction before and after retrofitting of selected buildings in FBiH through targeted social surveys among direct project beneficiaries; the change is measured as percentage increase in the number of survey respondents that are satisfied or very satisfied with comfort levels in the building focusing on adequacy of heating/ indoor temperature.	2021 and 2024	Social surveys	Building-specific social surveys on a sample basis	PIUs
Increase in end-user satisfaction in RS	This indicator measures changes in end-user satisfaction before and after retrofitting of selected buildings in RS through targeted social surveys among direct project beneficiaries; the change is measured	2021 and 2024	Social surveys	Building-specific social surveys on a sample basis	PIUs

	as percentage increase in the number of survey respondents that are satisfied or very satisfied with comfort levels in the building focusing on adequacy of heating/ indoor temperature.				
Development and implementation of customized skills training for target female beneficiaries	This indicator captures progress in developing and implementing key milestones to deliver customized skills training to target female beneficiaries (academic and professional career stages) to help addressing skills gap identified through market needs assessment.	Annual	Progress and training reports	Documentary evidence against defined milestones	PIUs
Reflows from EE repayments and captured energy cost savings	This indicator captures progress in terms of project reflows (repayments from cantons/ municipalities and captured energy cost savings) generated through the revolving financing models and reinvested to support EE improvements. VAT refunds are not included in the projections.	Annual	Progress reports and annual work plans	Annual public budget allocation	PIUs
Number of buildings with EU-compliant energy certification	This indicator tracks progress and enhanced capacity of private companies in issuing energy certificates for public buildings, and implementing the relevant provisions of the EU Directive on energy performance of buildings and related national regulation.	Annual	M&E system	Building-specific certificates	PIUs
Number of municipal energy managers trained	This indicator measures the increase in capacity of energy managers for municipal EE.	Annual	M&E system	Training records	PIUs

Annex 1: Selection and implementation process for BEEP AF

1. The building selection and implementation process will be based on the approach under the current phase of BEEP and be described in detail in the updated OM.

2. **Buildings eligibility criteria**. To be eligible, facilities must meet the following basic eligibility criteria: (i) confirmation of public ownership; (ii) structural soundness of the facility; (iii) absence of plans for closure, downsizing or privatization; and (iv) detached, single use buildings. In addition, in the FBiH, the eligibility of the local Government to borrow from the entity Ministry of Finance is an additional criterion that has to be taken into account before nominating and selecting cantonal/ municipal buildings.

3. **Call for proposals**. Public buildings will be selected based on periodic call for proposals to be issued by the Ministries of Physical Planning to local Governments (e.g. municipalities, cantons) and responsible line Ministries. Applications are expected to include basic information on the nominated buildings,[26] confirmation of eligibility and endorsement from the public entity with main budgetary responsibility (if different from the nominating entity). In the FBiH, the call for nominations to cantons/ municipalities may also involve an expression of interest in terms of total amount the local Government is willing to borrow in the next 1-3 years in order to facilitate the conclusion of multi-year borrowing decisions and implementation arrangements.[27] The call for proposals will be accompanied by extensive information and consultation sessions led by the BEEP PIUs to ensure full understanding of the selection process and criteria for buildings as well as related financing and implementation arrangements.

4. **Ranking of nominated buildings and selection criteria**. As under BEEP, the PIUs will review the applications, rank the buildings based on their EE potential, and arrange for the preparation of detailed energy audits (using BEEP AF resources or GCF-support provided via UNDP[28]) for the highest ranked buildings. The purpose of the detailed energy audits is to: (i) inform the design of the EE investments; (ii) provide the basis for the borrowing decision by local Governments in the FBiH and the amount of annual energy cost savings proposed to be captured in the RS, respectively; and (iii) confirm compliance with BEEP selection criteria. The latter involves two alternative criteria in line with BEEP:

- Group A includes buildings with an estimated investment payback period of less than 10 years; buildings in this group are expected to account for around 70 percent of total EE investment costs supported under Component 1 in order to demonstrate the viability of the revolving financing model.
- Group B includes buildings with at least 1 kWh savings per BAM invested (and an investment payback period between 10-20 years); this criterion allows buildings with significant energy savings potential using cheap fuel for heating to be included in the project (e.g. traditional wood- or coal-fired heating systems) given the social and environmental co-benefits associated with reduced or substituted wood

[26] For instance: building type, construction year, construction materials, square meters of heated area, energy consumption and bills for electricity and heating over the last three years, indoor temperature, past reconstruction/ EE improvements, etc.
[27] As part of the call for proposals, guidelines will be included in terms of average investment cost expected per square meter (based on BEEP experience) so as to provide cantons with guidelines on the number of buildings that may be nominated along with the requested amount.
[28] UNDP plans to finance up to 300 detailed energy audits under the GCF project, implemented directly by UNDP. To ensure close coordination with BEEP AF, it was agreed that: (i) the ToR would be mutually developed and agreed between UNDP, the PIUs and the World Bank team; (ii) selected buildings for audits aligned with the BEEP AF selection approach; and (iii) draft outputs submitted for review to the BEEP PIUs and the Bank team (as agreed).

and coal consumption. In the final list of selected buildings, Group B can account for up to 30 percent of total EE investment costs.

5. **Selection of buildings**. Based on the results of the detailed energy audits, the PIUs complete the ranking along the two categories (Group A and B) and submit a draft list of selected buildings with relevant technical, financial, social, geographical and other data to the World Bank for information, and subsequently for approval to the PSC. The latter is responsible for the selection of buildings in line with BEEP criteria, and may also take into account regional distribution of project benefits.

6. **Conclusion of implementation agreements for selected buildings**. Upon the confirmed selection of buildings by the PSC, the BEEP PIUs would arrange for conclusion of the following implementation arrangements:

a) *In the FBiH:* For selected cantonal buildings, the local Governments (municipalities or cantons) will have to issue a Government decision to borrow from the Federation the estimated investment costs (including all civil works but excluding related technical preparation, supervision and monitoring services) for the cantonal/ municipal buildings. Once the borrowing decision is issued, the FBiH Ministry of Finance will negotiate and conclude Sub-Agreements with the local Government stipulating the terms and conditions for the repayment of the investments costs, including the repayment and grace period, interest rates and repayment schedule from the local Government to the FBiH Ministry of Finance. In addition, the FBiH Ministry of Physical Planning will enter into MOUs with each local Government/ line Ministry for federal buildings and the project beneficiary (building administration), detailing the implementation arrangements and responsibilities of all key stakeholders involved.

b) *In the RS:* For buildings financed through the entity budget (e.g. primary schools, administrative buildings and select social facilities), the RS Ministry of Spatial Planning will enter into implementation agreements with the responsible line Ministry and the project beneficiary, which detail the implementation and financing arrangements, including the terms and conditions for capturing 50 percent of the estimated energy cost savings in each facility for a duration between 10-15 years[29] (or until 50 percent of the investment costs are recovered, whichever comes first) through a central budget capture mechanism.

   For buildings financed through the municipal budget (e.g. kindergartens, secondary schools) and with budget independence (e.g. universities, hospitals), the municipal Government and the management of the budget independent building, respectively, will have to issue a decision confirming its commitment to capture and transfer an annual amount equivalent to 50 percent of the estimated energy cost savings (on the basis of the detailed energy audits) for a duration of 10-15 years (or until 50 percent of the investment costs are recovered, whichever comes first) to the RS Environmental Protection and EE Fund ('RS EE Fund). Once the decision is issued, the RS Ministry of Spatial Planning, the RS EE Fund, the municipality (as relevant) and the project beneficiary (building administration) will conclude an implementation agreement stipulating the implementation arrangements, financing obligations and responsibilities of all key stakeholders involved.

[29] For buildings in Group A, the maximum repayment period is set at 10 years and for buildings in Group B, the maximum repayment period is set at 15 years, or until 50 percent of the BEEP investment costs are recovered, whichever comes first.

7. **Preparation of EE investments.** Upon conclusion of the implementation agreements, the BEEP PIUs will arrange for the preparation of detailed designs on the basis of the energy audits, and prepare bidding documents for civil works. Eligible rehabilitation measures include:

a) EE investments, such as retrofits of the building envelope (e.g. façade, windows, roofs and doors); heating, cooling, hot water system upgrades and replacements (e.g. replacement of boilers, installation of thermostatic radiator valves/ TRVs, balancing valves, automatic temperature controls, pipe insulation, solar water heating, etc.); lighting upgrades and replacements; and other viable EE investments; the package of implemented EE investments will be determined on the basis of the detailed energy audits, is expected to account for at least 90 percent of the total investment cost and include EE investments with a positive NPV.[30]

b) Other measures to ensure longevity of the investment and access to facilities, and to accommodate requests from project beneficiaries; such measures may include: replacement of gutters and downs spouts; access ramps to the facilities; upgrade of sanitary facilities; painting of the buildings; etc. Investments of these measures are capped at a maximum of 10 percent of the total investment costs per building financed through BEEP AF resources.

8. **Implementation of EE improvements**. Upon approval of the designs, the BEEP PIU will arrange for the procurement and implementation of civil works, works supervision,[31] issuance of energy performance certificates as well as technical and social monitoring and evaluation before and after building retrofits in a sample of selected buildings. Technical services as well as civil works will be bundled to the extent possible.

[30] Based on the experience under BEEP, all roof-related measures will be accounted as EE measure although they are expected to involve in many cases non-EE related replacement or reconstruction to prevent water leakages. Therefore, roof-related measures may not have a positive NPV.

[31] In the RS, the RS Directorate for Reconstruction and Construction will be used to conduct supervision of civil works in around 5-7 buildings per year with the works supervision in the remaining buildings to be performed by a licensed company hired under BEEP AF. For this purpose, the RS Ministry of Spatial Planning will conclude a Memorandum of Understanding with the Directorate, outlining the supervision services to be performed on the basis of the agreed ToR for supervision activities. No BEEP and AF resources will be used to pay for any expenses of the Directorate.

Annex 2: Governance and Accountability Action Plan

1. **Objective and focus areas of the Governance and Accountability Action Plan (GAAP).** The GAAP is an instrument to be used by the Ministries of Physical Planning, the PIUs and the World Bank to strengthen governance, accountability and transparency of BEEP and the proposed AF. The GAAP has been developed on the basis of key risks identified through SORT as well as project implementation experience and processes under BEEP. Specific areas the GAAP aims to address include: (i) risk of potential fraud and corruption at procurement and contract management stage; (ii) complex governance structure of the project involving various project stakeholders and decision-making responsibilities (e.g. Ministries, PIUs, local Governments and beneficiaries); and (iii) dispersed subprojects and beneficiaries throughout the country.

2. **Principles and approach for the GAAP**. To address above key areas, the GAAP focuses on measures aimed at: (i) strengthening governance and accountability of the decision-making process throughout implementation; (ii) enhancing transparency and public participation through proactive public disclosure of project information, facilitating citizen engagement and strengthening the GRM of the project; and (iii) facilitating monitoring of early governance indicators. To this end, specific time-bound actions in each of the three focus areas were identified and agreed with the Ministries of Physical Planning (see Table A2.1) as part of appraisal of the proposed AF, most of which will start to be implemented under the parent project and be continued under the proposed AF. The GAAP is included as part of the updated OMs for the AF, and complemented by operational and fiduciary arrangements and responsibilities set for the in the OM (e.g. conflict of interest, tender evaluation committees, step-by-step plans for project implementation, etc.). The GAAP and the OMs are considered 'living documents', which will be adjusted as needed during implementation to reflect any governance issues that may emerge and/or strengthen or add actions.

Table A2.1: Governance and Accountability Action Plan for BEEP and its AF

	Action	Responsibility	Timeline
Accountability			
1	Adopt updated protocol (detailing roles, responsibilities, processes and service standards) for procurement and contract management-related decision-making chain; specifically, this will include: (i) automated process and services standards for contract approvals, signing and extensions; and (ii) principles, processes, responsibilities and service standards for requesting and approving Variation Orders (VOs) and related contract amendments during civil works implementation	Ministries of Physical Planning/ PIUs	BEEP (November 2018) and AF (OM)
2	Conduct at least annual trainings to beneficiaries and other stakeholders on contract management	PIUs	November 2018 and then recurrent on annual basis
3	Adopt updated protocol for logging, filing, monitoring, reporting and addressing oral or written complaints or grievances received under BEEP and AF (including non-retaliation information policy), and appoint PIU staff with related responsibilities	Ministries of Physical Planning/ PIUs	BEEP (December 2018) and AF (OM)

4	Adopt protocol for establishment and operation of internal Complaint Review Committee for procurement and contract - related complaints under AF, including criteria, procedures and service standards	Ministries of Physical Planning	AF (December 2018)
5	Add statement to minutes of signing of civil works contracts confirming that contracts are signed on the same terms and conditions (commercial and technical) as stipulated in the bidding documents	PIUs	BEEP (September 2018) and AF
Transparency and Public Participation			
6	Continue to ensure regular public disclosure (website) of contract awards (including amounts and contractors)	PIUs	BEEP and AF
7	Publish semi-annual project progress reports (website), including summary of implemented activities, progress achieved (including pictures), contracts awarded, procurement complaints and grievances received, etc.	PIUs	BEEP (December 2018) and AF
8	Strengthen project website by adding detailed information on buildings retrofitted (including pictures, relevant technical and contractual information, completion dates, energy performance class, investment costs, etc.)	PIUs	BEEP (January 2019) and AF
9	Strengthen GRM by: (i) ensuring easily accessible and widely disclosed channels to submit grievances (e.g. contract information and website); (ii) strengthening features for submitting questions/ comments/ complaints by the public; (iii) adding possibility of 'real time' civil works progress pictures by the public and end-users; (iv) appointing responsible PIU staff for handling and monitoring input received; and (v) public reporting on GRM (see Action 7 above)	PIUs	BEEP (January 2019) and AF
Monitoring and Reporting			
10	Submit quarterly reports to the Bank on all upcoming and ongoing procurements and contracts, including but not limited to status and timelines between milestones (on the basis of the agreed procurement plans and Action 1)	PIUs	BEEP (starting September 2018) and AF
11	Submit technical documentation for Bank's technical prior review for the remainder of BEEP and first set of buildings selected under AF	PIUs/Bank	BEEP and AF
12	Continue submitting enhanced semi-annual comprehensive project progress reports based on updated template	PIUs/Bank	BEEP (starting September 2018) and AF
13	Submit to Bank for review VOs introducing new items or changes in quality of materials before approving VOs	Both PIUs	BEEP (immediate)