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**“Green Economic Development - Second Phase”**

**(GED Project)**

**Final Evaluation**

**Elinor Bajraktari & Gordana Alibasic**

**February 2021**

**Executive Summary**

Funded by the Government of Sweden, the second phase of the Green Economic Development project (referred to in this report as GED II) is a follow up of the Green Economic Development project (September 2013 - December 2018). The table below provides a summary of the project.

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| --- | --- | --- |
| **Project title** | Green Economic Development (Second Phase) | |
| **Atlas ID** | 00105415 | |
| **Corporate outcome and output** | UNDP Strategic Plan Outcome 1; Output 2.5.2 | |
| **Country** | Bosnia and Herzegovina | |
| **Date project document signed** | 24.01.2018. | |
| **Project dates** | 1 February 2018 | 28 February 2021 |
| Beginning | End |
| **Project budget** | 18.1.5 mill USD | |
| **Project expenditure at the time of evaluation** | 9,283,901 | |
| **Funding source** | Government of Sweden and Local Governments | |
| **Implementing party** | UNDP | |

Overview of the evaluation object

The GED II project is a highly relevant intervention for the energy efficiency sector in Bosnia and Herzegovina that has improved the capacity and skills of the relevant institutions and professionals, establishing system that enables financing for EE and RES infrastructure projects while generating green jobs and reducing CO2 emissions and creating overall favourable conditions for investments in RES/EE. The project has enabled all levels of governments to improve the way in which they monitor, analyze and evaluate energy consumption, costs, emission, energy investments and savings data from public sector buildings, as well as to undertake practical energy efficiency or renewable energy targets infrastructure works. The project has also directly contributed to the country’s EU accession process through the support it has provided for the adoption of key provisions in EE-related EU directives.

The project has established strong partnerships with 8 cantonal and 35 municipal governments, as well as the relevant entity ministries in the area of energy efficiency and environmental protection. Key project beneficiaries have been the users of public buildings (health, educational and cultural institutions) in which the EE infrastructural works were implemented, as well as the citizens in the communities where public lightning was improved.

Evaluation objectives and intended audience

The purpose of this evaluation was to provide an impartial assessment of the project in terms of its relevance, effectiveness, efficiency, impact, sustainability, management and achievements. The evaluation’s objective was to examine the project’s overall performance, its results, inputs and activities, and how the outputs delivered added value to target groups and institutional beneficiaries. The information, findings, lessons learned and recommendations generated by the evaluation will be used by the Project Board, UNDP, Government of Sweden and other relevant stakeholders to strengthen the remaining project implementation and inform the upcoming phase of the project.

Evaluation methodology

The methodology was based on mixed methods and involved the use of evaluation tools such as documentary review, interviews, information triangulation, analysis and synthesis. A participatory approach was taken for the collection of data, formulation of recommendations and identification of lessons learned. No field work was undertaken for this evaluation. Interviews with a sample of stakeholders were conducted remotely through interviews by Zoom and/or Microsoft Teams, given the impact of COVID-19 and associated travel restrictions. They included project and UNDP staff, officials of different levels of government (including state, entities, cantons and municipalities), and development partners (in this case, the Swedish Embassy).

Most important findings and conclusions

The GED project is a sustained effort over time that has built strong foundations in Bosnia and Herzegovina based on a close partnership with governments at all levels. This project is really exemplary in how it has evolved over time – starting with phase I where the foundations of this engagement were laid, moving on to phase II where the project created a clearer profile and strengthened partnerships and proceeding the upcoming phase III where many of the achievements that are profiled throughout this report will be further consolidated.

The project’s design is quite comprehensive. Financing, development of policy and legislative frameworks capacity building for EE professionals and government officials, demonstration of the feasibility of EE improvements through practical initiatives, awareness-raising and research, generation of off-grid energy from RES, etc. – all these are crucial components of the project that form a comprehensive and well-rounded intervention. Its bottom-up approach to promoting and undertaking energy efficiency is a key positive feature, along with the coverage of the full range of project cycle for EE interventions – from design, revision, supervision, and implementation of energy efficiency/renewable energy measures. Another key feature of the project has been its focus on raising decision-makers' awareness and knowledge on the benefits of energy efficiency improvements. A challenge of the project’s design has been the fact that several indicators have been unclear, as insufficient guidance was provided on their measurement in the project design. The project team settled for their own definition of the measurement of the project’s indicators and on that basis proceeded with tracking these indicators over time.

The biggest challenge that the GED project has faced during its implementation has been the country’s complicated governance structure, which is also present in the area of energy efficiency. The sector is managed through a quite fragmented system of decision making, responsibilities and accountability. Progress on any activities requires a lot of negotiation with various stakeholders at all levels. Also, the absence of the energy efficiency laws has constituted a daunting challenge for the team, as many activities were dependent on the legal framework. However, as will be seen further in this report, the project team has been able to deliver on most of the planned activities and financial resources by adroitly navigating the country’s complex decision-making landscape. It must be noted that thanks to many years of UNDP’s engagement in this area and the trust it has built with the local stakeholders, many of these challenges have been overcome quite successfully and under the circumstances Bosnia and Herzegovina has made good progress in this area.

The project has contributed to the establishment of a clear legislative framework, strategy and action plans, as well as reporting and monitoring mechanisms, at the respective levels of government. It has strengthened the capacities of relevant institutions through different trainings, technical assistance, conferences and consultations on various topics related to energy efficiency, renewables, energy management, EU directives, as well as creating mechanism for data collection, monitoring, verification, and reporting mechanisms harmonized with the EE laws and bylaws of FBiH and RS. The project has also been key in generating information about building energy intensity and real energy costs.

One of the most important contributions of the project has been the implementation of infrastructure improvements in public buildings and lighting systems throughout the country. A notable feature of this component has been the provision of co-financing by the respective governments for investments in buildings under their ownership. Throughout the second phase, a total of 110 infrastructure initiatives were completed by the project. The total amount of money invested in infrastructure initiatives has been about US$ 16 m, a considerable amount for the sector. Of this, about US$ 4.9 m has come from the project budget and about US$ 11.1 m from co-financing by the various participating governments.

While most project objectives have been completed at this point, the important objective of promoting at least 18 non-grant (loan-based) infrastructure investments in public buildings has not been achieved yet. This is the greatest challenge the project has experienced. No loan-based investments from the environmental funds have materialized in the period in question. The main reason for this has been the lack of interest in non-grant investments by the various government entities involved in infrastructure investments.

The table below summarizes the project’s main achievements.

|  |  |
| --- | --- |
| **Key Indicators** | **Result** |
| Number of energy efficiency infrastructure initiatives (projects) implemented through the grant co-financing modality | 110 |
| Total amount invested in infrastructure initiatives (US$) | 15,956,083 |
| Number of public buildings with implemented infrastructure measures | 100 |
| Number of direct beneficiaries of EE/RES initiatives | 606,803 |
| Number of direct women beneficiaries of EE/RES initiatives | 270,176 |
| Number of households provided with RES solutions in off-grid areas | 24 |
| Number of generated man-months “green jobs" (also for women separately) | 971 |
| Number of detailed energy audits conducted | 196 |
| Total energy consumption savings generated by initiatives in public sector buildings | 59% |
| Total amount of direct CO2 emission reductions | 5,077 |
| Number of cost-optimal analyses conducted for public buildings | 3 |
| Number of awareness-raising events | 47 |
| Number of promotional materials distributed | 49,767 |
| Number of people reached through marketing campaign | 2,307,070 |

Overall, the project has spent 85% of its resources. With regards to procedures and processes, the project team has been able to complete a very significant number of complex infrastructure initiatives in record times. Local partners and end-users interviewed for this evaluation were pleased with the efficiency and speed of project activities. Given some of the outstanding activities, the project team has already requested a no-cost extension until the end of 2021, which will allow the project team to complete all planned activities with the exception of the non-grant (loan) activity.

The dimension of sustainability will require further attention going forward. The fact that the project’s phase III has been approved is a significant factor for sustainability, as many of the achievements that have been made so far will be further consolidated. As has been noted above, the focus should be on further establishing the conditions for market-based solutions to energy efficiency and a more fundamental shift at the psychological level of the community in general.

GED II has made significant improvements compared to GED I in designing and implementing its activities with a much better sense of awareness about the involvement of men and women in its activities as stakeholders or beneficiaries. This approach should be maintained and further enhanced in the third phase of the project.

Going forward into GED III, this evaluation recommends that while further consolidating the achievements in the area covered by GED II, the attention of project stakeholders and decision-makers could be turned to two crucial matters – sustainability of financing and the power of social norms. While the grants used by the GED project have been crucial in unlocking significant budgetary resources from various levels of government for investments in energy efficiency, a lot more potential could be unlocked through the market mechanism. Grants are good in the short run for demonstrating the effects of a certain approach or technology, but in the long run they are not sustainable. Only market-based solutions are sustainable in the long run. Also, in the project’s third phase, the issue of social norms and mentality could be approached more strategically by using more effectively the latest findings from experimental psychology and behavioral economics (i.e. Framing and Psychological Cues, Status Quo Bias/Inertia, Discounting the Future, etc.).

Main recommendations

This evaluation has derived the following set of recommendations.

|  |  |
| --- | --- |
| **RECOMMENDATION** | **RESPONSIBLE PARTIES** |
| **Recommendation 1**  The project’s foremost attention at this stage (before commencing the GED III phase) should be on completing by the end of 2021 the outstanding activities outlined in section 3.3.2 of this report.   * As a first step, the project team should establish more specifically and firmly through their work plan which of the remaining activities are feasible to be completed under the current phase until the end of 2021 and which activities could be carried over into the new phase. This information should be based on a sound analysis of the various factors around these activities, including clear timelines and goalposts, presented clearly in a document. * The project team should also seek to obtain clear commitments from the respective government counterparts on pending key decisions – such as the approval of the rulebooks, by-laws, etc. A clearer sense of when these decisions are expected to be made will be useful at this stage and should be reflected in the planning documents. | * **Project Team supported by UNDP CO and respective government partners** |
| **Recommendation 2**  Looking forward to GED III, the UNDP CO should maintain and further strengthen coordination with all relevant stakeholders operating in the EE area.   * The GED project is already well-coordinated with the other UNDP projects and with the WB’s BEEPS programme. However, stronger cooperation should be forged under GED III with other players in this area, especially with the upcoming KfW and EBRD activities. * Under GED III, UNDP and the Swedish embassy should join efforts in strengthening the coordination platform with all development partners in this area. The idea of the “*Revolving Fund*” that is under discussion between the Ministry of Spatial Planning in the Federation and the KfW should be discussed more widely, especially in the context of the GED project’s efforts to support the establishment of the revolving funds under the two environmental funds. The KFW-supported concept only concerns the public building sector, whereas the “revolving fund” concept under the environmental funds pursued for years under the GED project is more comprehensive in nature and inclusive of the public buildings. UNDP CO and the Swedish Embassy, jointly with the respective counterparts, should forge a harmonized approach on the revolving fund issue. Also, UNDP and the Swedish Embassy should advocate for a more systematic approach to the establishment/operationalization of the revolving fund in the Federation and Republika Srpska. In both entities, the GED platform and the existing infrastructure of environmental funds represents a solid foundation on which to ground activities on the establishment of revolving funds. | * **UNDP** * **Swedish Embassy** |
| **Recommendation 3**   * Under GED III, the project should aim for greater sustainability by ensuring the establishment of a durable and well-functioning loan mechanism for EE investments in buildings that enables building owners to remove the budgetary restrictions that often constrain their options. * When it comes to the SME sector (which will be a key target of the project’s third phase), a market-based based approach to energy efficiency investments will be crucial. Also, the de-risking subsidy of interest rates for commercials loans in the SME sector foreseen under GEF III should be pursued towards greater involvement of the commercial banking sector into the financing of EE investments. * Greater involvement of commercial banks in energy efficiency investments under GED III will be key for the sustainability of achievements in the EE area. | * **UNDP** * **Relevant Government Entities** * **Swedish Embassy** |
| **Recommendation 4**  UNDP should consider more strategically the role of social norms as a crucial determinant of perceptions and decisions about energy efficiency.   * UNDP interventions should be more focused on what actually works in practice and should be cognizant of the norms that prevail in the communities. This requires a more analytical and data-driven approach to awareness-raising and publicity activities, which so far seem to have been more generic in nature. * In GED III, the issue of social norms and mentality could be approached more strategically by using more effectively the latest findings from experimental psychology and behavioral economics (i.e. Framing and Psychological Cues, Status Quo Bias/Inertia, Discounting the Future, etc.), rather than taking broader information-sharing approaches using large-scale marketing campaigns. | * **UNDP** |

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**ACRONYMS AND ABBREVIATIONS**

BEEP Bosnia and Herzegovina Energy Efficiency Project

CO Country Office

EE Energy Efficiency

EED Energy Efficiency Directive

EMIS Energy Management Information System

EPBD Energy Performance Building Directive

EU European Union

GCF Green Climate Fund

GED Green Economic Development

GIZ Deutsche Gesellschaft für Internationale Zusammenarbeit

LPAC Local Project Appraisal Committee

MoFTER Ministry of Foreign Trade and Economic Relations

PC Project Component

RED Renewable Energy Directive

RES Renewable Energy Sources

ToR Terms of Reference

UNFCCC United Nations Framework Convention on Climate Change

WB World Bank

WBIF Western Balkans Investment Framework

# INTRODUCTION

## Project Background

Bosnia and Herzegovina has a high level of energy consumption inefficiencies in the residential, non-residential/public, industry, and service sector.[[1]](#footnote-2) At the same time, it has one of the most significant energy conservation potentials in its region and could base its mid-term economic development and job creation on energy efficiency improvement measures in the residential and public sector.

Most of the energy in Bosnia and Herzegovina is consumed by the public and residential building sectors – about 55% of total energy consumption. The average energy consumption of public buildings is three times higher than the average in the countries of the European Union (EU). In accordance with the EU Eco-Management and Audit Scheme – EMAS, public buildings across the country are categorized as energy inefficient. According to the data from 2008, about 90%[[2]](#footnote-3) of the current building stock does not meet technical standards of Bosnia and Herzegovina. Due to inefficiencies, the average public building in Bosnia and Herzegovina can achieve an energy consumption reduction of up to 60% with investments, resulting in a rather short pay-back period (up to six years). In order to meet such energy intensive consumption demands, a significant amount of budgetary resources must be allocated for energy expenditures of public buildings (educational, health, cultural, municipal and entity/state institutions etc.), representing a major proportion of the already inadequate public budget.

The energy sector in Bosnia and Herzegovina is organized according to the General Framework Agreement for Peace, positioning the entity line ministries of the Federation of Bosnia and Herzegovina and Republika Srpska as the key players in the Energy Efficiency / Renewable Sources framework, while giving the state level, represented by the Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina, a coordinating/reporting role for multilateral agreements. As such, the direct implementation of the Energy Efficiency / Renewable Sources related activities and EU acquis (such as achieving energy saving targets, energy monitoring, enforcements of legislations, financing mechanisms etc.) falls under the jurisdiction of entity/cantonal levels.

Bosnia and Herzegovina has adopted a National Energy Efficiency Action Plan, whereas a National Energy and Climate Plan for the period of 2021-2030 is in the drafting phase. The foundation for the development of both documents is the Framework Energy Strategy for Bosnia and Herzegovina until 2035.[[3]](#footnote-4) These are the important steps towards fulfilling the requirements of the Energy Community Treaty. In addition, the Framework Energy Strategy of Bosnia and Herzegovina until 2035 was adopted in August 2018, creating conditions to draw IPA funds and funds from the Western Balkans Investment Framework (WBIF) for the energy sector, as well as attract investors to the sector. The Federation of Bosnia and Herzegovina has adopted the Renewables Action Plan in November 2018 and set tentative targets for the share of renewable energy in the total final consumption in the heating and cooling, electricity, and transportation sectors until 2020. At the end of 2018, two regulations regarding energy efficiency certification of buildings were adopted: *Decree on the conditions for granting and revoking authorizations for performing energy audits and energy certification of buildings*, and *Decree on conducting energy audits and issuing energy certificates in the Federation of Bosnia and Herzegovina*. In 2019, the Rulebook on the energy efficiency information system and energy management in the Federation of Bosnia and Herzegovina was adopted. The adoption of the relevant legislative and strategic frameworks in the area of energy management sets foundations for further development of energy efficiency, renewable energy, and energy management sector in the country. However, there is a lot of work ahead in order to fulfill all the obligations of the Energy Community Treaty.

It should be noted that progress in the area of energy efficiency, as in all other areas, has been in the last year impacted by the Covid-19 pandemic.[[4]](#footnote-5) While the pandemic has been slow in spreading in Bosnia and Herzegovina, throughout 2020 the number of confirmed cases was climbing rapidly. A state of emergency was declared by both entity governments on 16 March 2020[[5]](#footnote-6) and at the state level – on 17 March 2020.[[6]](#footnote-7)

## Project Description

Funded by the Government of Sweden, the second phase of the Green Economic Development project (hereinafter referred to as GED II) is a follow up of the Green Economic Development I project (September 2013 - December 2018. The project contributes to the creation of an environment attractive for Energy Efficiency / Renewable Sources investments in the public and residential sector, generation of new employment and creation of clear energy monitoring mechanisms in Bosnia and Herzegovina. GED II contributes to Bosnia and Herzegovina’s EU accession process, targeting the Energy Performance Building Directive, Energy Efficiency Directive and Renewable Energy Directive. The project specific objectives/outcomes focus on enabling all levels of governments in Bosnia and Herzegovina to monitor, analyze and evaluate energy consumption, costs, emission, energy investments and savings data from public sector buildings, as well as to support energy efficiency and renewable energy targets (in accordance with the Energy Community Treaty and its obligations) by providing financial support to EE and RES infrastructure works.

Table 1: Project Summary

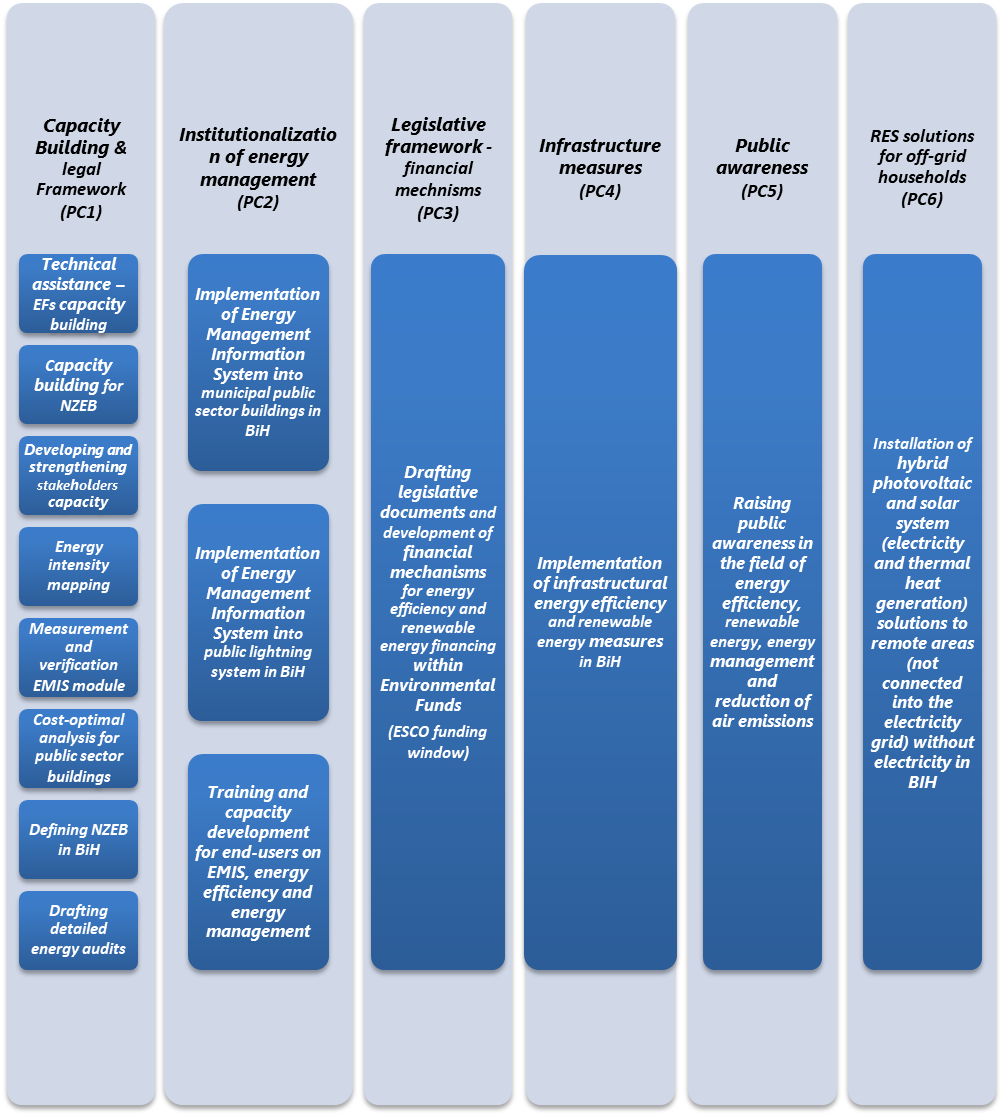
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| **Project title** | Green Economic Development (Second Phase) | |
| **Atlas ID** | 00105415 | |
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| **Project budget** | 18.1 mill USD | |
| **Project expenditure at the time of evaluation** | 9,283,901 | |
| **Funding source** | Government of Sweden and Local Governments | |
| **Implementing party** | UNDP | |

The project’s specific objectives, among others, were envisaged to:

* Create an understanding and institutionalize energy monitoring and reporting mechanisms/energy management at the municipal level for public sector buildings and public lighting;
* Develop and adopt self-sustainable financial mechanism in Environmental Protection Funds in Bosnia and Herzegovina for the green economy through energy efficiency and renewable energy project financing;
* Achieve budget cost savings by implementation i) renewable energy projects in public sector buildings and ii) energy efficiency projects in public buildings and public lighting systems, and reinvesting savings in other infrastructure projects;
* Generate employment of domestic workforce;
* Increase public awareness and understanding of human development as a result of renewable energy and energy efficiency project benefits;
* Contribute to EU accession through the EPBD, EED and RES directives.

The project is organized around six components and 15 activity groups, strongly interconnected with each other, as shown in the figure below.

Figure 1: Project Components and Activity Groups



The box below summarizes the project’s expected outputs.

Box 1: Project Outcomes as Defined in the Results Framework

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| --- |
| The project consists of seven outcomes:   * **Outcome 1**: To develop capacity and strengthen skills of Environmental Fund staff; * **Outcome 2**: To develop capacity and strengthen skills of energy professionals; * **Outcome 3**: To establish energy monitoring and reporting mechanisms; * **Outcome 4**: To enable financing for Energy Efficiency / Renewable Sources infrastructure projects in Bosnia and Herzegovina; * **Outcome 5**: To implement cost-optimal, green jobs generating and emission reducing Energy Efficiency / Renewable Sources infrastructure projects; * **Outcome 6**: To increase general public’s understanding of Energy Efficiency / Renewable Sources benefits; * **Outcome 7**: To provide access to energy for off grid households. |

GED II has established strong partnerships with 8 cantonal and 35 municipal governments for the implementation of infrastructure works. Additionally, the project has established partnerships with the relevant entity ministries in the area of energy efficiency and environmental protection. Key beneficiaries of GED II are the users of public buildings (health, educational and cultural institutions) in which the EE infrastructural works were implemented. Other beneficiaries include citizens in the communities where public lightning was improved.

# EVALUATION OBJECTIVES AND METHODOLOGY

* 1. **Purpose, Objective and Scope of the Evaluation**
* **Purpose**: The purpose of this evaluation is to provide an impartial review of GED II in terms of its relevance, effectiveness, efficiency, impact, sustainability, management and achievements. The information, findings, lessons learned and recommendations generated by the evaluation will be used by the Project Board, UNDP, Government of Sweden and other relevant stakeholders to strengthen the remaining project implementation and inform the upcoming phase of the project.
* **Objective**: The evaluation’s objective is to examine the overall performance of the project, its results, inputs and activities, and how the outputs delivered added value to target groups and institutional beneficiaries. In a substantive analysis of the effectiveness of the project approach and feedback from beneficiaries and relevant stakeholders, the evaluation has assessed cause and effect relations within the project, identifying the extent to which the observed changes can be attributed to the project. In addition, this evaluation provides forward-looking recommendations to the Government of Sweden and UNDP in the field of energy management in Bosnia and Herzegovina.
* **Scope**: The evaluation assessed the extent to which planned project outcomes and outputs have been achieved since the beginning of the project (based on the Project Document and its results framework). The evaluation looked into the overall project performance and results. It examined critical project aspects, such as policy and legislative support in the area of energy management, development of financial mechanism and improved investment environment for green economic development and generation of employment. It also considered the relevance and influence of implemented infrastructure projects on the individuals and groups within the project’s targeted localities. The evaluation looked into the project’s processes, innovations, strategic partnerships and linkages in the specific country’s context, that proved critical in producing the intended outputs and the factors that facilitated and/or hindered the progress in achieving the outputs, both in terms of the external environment and risks, as well as internal, including: weaknesses in project design, management, human resource skills, and resources. Finally, the evaluation assessed how the project has adjusted its implementation strategy and approach to respond to new circumstances imposed by the COVID-19 pandemic.

## Evaluation’s Methodology

The scope and main steps of the evaluation process were laid out in the Terms of Reference (ToR), attached in this report’s Annex I. The evaluation was conducted by a team composed of two evaluation consultants. The evaluation applied OECD DAC criteria[[7]](#footnote-8) and definitions and followed norms and standards established by the UN Evaluation Group. It was guided by requirements of UNDP’s evaluation toolkit, and in particular the “*UNDP Evaluation Guidelines*”, including the revisions in the conditions of Covid-19[[8]](#footnote-9). The methodology was based on mixed methods and involved the use of evaluation tools such as documentary review, interviews, information triangulation, analysis and synthesis. A participatory approach was taken for the collection of data, formulation of recommendations and identification of lessons learned. Evaluation activities were organized according to the following stages: i) planning; ii) data collection; and, iii) data analysis and reporting. Figure 1 below shows the three stages and the main activities under each of them.

Figure 2: Evaluation Stages

Table 2 (below) further details the main activities that were undertaken by the evaluators under each stage.

Evaluation Planning

The planning and preparation phase included the development of the ToR by the project team and UNDP CO and the design of the evaluation framework by the evaluators. The evaluators developed a detailed programmatic scope of evaluation activities, as well as sample interview guides for interviews with stakeholders.

Table 2: Evaluation Steps

|  |
| --- |
| 1. **Planning**  * Development of the ToR * Start-up teleconference and finalization of work plan * Collection and review of project documents * Elaborated and submitted evaluation work plan |
| II. **Data Collection**   * Further collection of project-related documents * Preparation of interviews: agenda and logistics * Phone or web interviews with key stakeholders (a country mission and in-person interviews did not take place due to COVID-19) |
| III. **Data analysis and reporting**   * In-depth analysis and interpretation of data collected * Follow-up interviews and development of draft evaluation report * Circulation of draft report * Integration of comments and submission of final report |

Data Collection

The data collection process involved a comprehensive desk review of project documents and interviews with stakeholders (see Annex II for a list of data sources).

* ***Desk Review*** – The evaluators started by analyzing relevant documents, project documents and progress reports, as well as national policies and strategies. Documents from related initiatives, as well as reports on the specific context of the project formed part of the analysis.
* ***Semi-structured Interviews*** – No field work was undertaken for this evaluation. Interviews with a sample of stakeholders were conducted remotely through interviews by Zoom and/or Microsoft Teams, given the impact of COVID-19 and associated travel restrictions. They included project and UNDP staff, officials of different levels of government (including state, entities, cantons and municipalities), and development partners (in this case, the Swedish Embassy). Open-ended questions were used to enable interviewees to express their views freely and raise the issues they considered most important. Annex II shows the full list of people interviewed for this evaluation.

Data Analysis

Information obtained through the documentary review and interviews was triangulated against available documented sources and was synthesized using analytical judgment. The method of triangulation is depicted in Figure 3 below.

Figure 3: Method of Triangulation

**Perceptions of external actors**

**Perceptions of project implementers**

**Documentation**

**Results**

Figure 4 shows the steps that were taken for the analysis which was conducted on the basis of the standard criteria of relevance, effectiveness, efficiency, and sustainability.

* ***Relevance,*** covering the assessment of the extent to which outcomes were suited to national development priorities and organizational policies, including changes over time;
* ***Effectiveness,*** covering the assessment of the achievement of the immediate objectives (outputs) and the contribution to attaining the outcomes and the overall objective of the project; and an examination of the any significant unexpected effects of the project;
* ***Impact,*** covering the project’s effects and impact in terms of implemented energy efficiency measures, both in qualitative, as well as quantitative terms, on the overall improvement of quality of life of citizens in targeted areas
* ***Efficiency,*** covering the assessment of the quality of project implementation; adequacy of financial management; efficient implementation;
* ***Sustainability,*** covering likely ability of the intervention to continue to deliver benefits for an extended period of time after completion.
* ***Coherence,*** covering the project’s interaction with other complementary projects, in order to achieve synergies and maximize development results

Figure 4: Steps in Analysis Process

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step 1.** Develop the results chain | **Step 2.** Assess the existing evidence on results | **Step 3.** Assess the alternative explanations | **Step 4.** Assemble the performance story | **Step 5**  Seek out the additional evidence | **Step 6** Revise and strengthen the performance story |

The analysis also covered aspects of project formulation, including the extent of stakeholder participation during project formulation; design for sustainability; linkages between project and other interventions; adequacy of management arrangements, etc.

## Evaluation Limitations

All possible efforts were made to minimize the limitations of this evaluation. UNDP provided good support for the evaluation process. The main challenges encountered during this evaluation were the restrictions due to the COVID-19 pandemic which began in the winter of 2019. The international consultant was not able to travel to the country and conducted all the evaluation work remotely. No face-to-face meetings were conducted for this evaluation. To mitigate this challenge, the evaluation team used questionnaires and interviews for a number of key stakeholders, such as the project team, UNDP CO, the implementing national counterparts, as well as beneficiaries.

## Structure of the Report

The report begins with an introductory section that provides a description of the project and the country context (previous chapter). The second (current) chapter provides an overview of the evaluation objectives and methodology. The third chapter presents the main findings of the report and consists of two parts: the first part assesses key aspects of project design and formulation; the second part focuses on implementation and presents an assessment of the project’s achievements along the standard dimensions of relevance, effectiveness, impact, efficiency, coherence and sustainability. The fourth chapter identifies key “lessons learned” drawn from the experience of this project. The fifth chapter summarizes the main conclusions and the last (sixth) chapter provides a set of recommendations for the consideration of project stakeholders. Additional information supporting the arguments made throughout the document is provided in the annexes attached to this report.

# FINDINGS

The findings presented in this report are organized in the following three sections: ***i) Project Design***; ***ii) Project Implementation; and, iii) Project Achievements***.

## Project Design

This section of the report provides an assessment of the design of the project. Findings related to the implementation and results of the project are presented in sections 3.2 and 3.3 of this report (*Project Implementation* and *Project Results*, respectively).

### Project Approach and Logic

The first thing that should be noted with regards to the approach of the GED project is its continuous and programmatic nature over time. Unlike many UNDP and other donor projects, the GED project is a sustained effort over time that has built strong foundations in Bosnia and Herzegovina based on a close partnership with governments at all levels (as will be see further in this report). This project is really exemplary in how it has evolved over time – starting with phase I where the foundations of this engagement were laid, moving on to phase II where the project created a clearer profile and strengthened partnerships and proceeding the upcoming phase III where many of the achievements that are profiled throughout this report will be further consolidated.

Description of the first phase of the GED Project

The implementation of the first phase of the GED project (hereinafter referred to as GED I) started in 2013, with a first wave of four energy efficiency infrastructure projects in public sector buildings. These initiatives were implemented based on detailed energy audits and analysis of technological and socio-economic factors. The idea behind these infrastructure measures was to conduct “deep retrofits” in accordance with the requirements of EU directives. A total of 137 infrastructure projects were implemented in the period 2013-2018. The box below provides an overview of the main activity areas under the GED I project.

Box 2: Brief Overview of the GED I Project (2013-2018)

|  |
| --- |
| The project consisted of nine main activities:   1. Technical assistance; 2. Developing and strengthening the technical and economic capacity of energy experts in Bosnia and Herzegovina; 3. Implementation of detailed energy audits for public sector buildings; 4. Implementation of Energy Management Information System (EMIS) in public buildings in Bosnia and Herzegovina; 5. Training and capacity development for end-users on EMIS, energy efficiency and energy management; 6. Preparation of energy efficiency baseline Study for public sector buildings; 7. Drafting legislative documents and development of financial mechanisms for energy efficiency financing within Environmental Funds; 8. Implementation of infrastructural energy efficiency measures in public sector buildings; 9. Raising public awareness in the field of energy efficiency, energy management and reduction of emissions to air. |

In 2015, the Swedish Government joined the project with financial support. With the Swedish contribution, GED activities expanded in scope and depth. Some of additional achievements realized thanks to this contribution were the following:

* Number of detailed energy audits and infrastructure works surpassed initial targets two times, increasing energy and cost savings, CO2 emission reductions, as well as the number of green jobs created and beneficiaries impacted y the project;
* Public lighting systems were added to the project, including the creation of new module for this sector in EMIS;
* Green jobs study was developed, identifying indicators for measuring the impact on jobs of energy efficiency measures implemented through infrastructure works;
* Study on human development benefits of energy efficiency, as well as the mainstreaming of gender in energy efficiency activities, was conducted, which showed the impact of implemented measures not only in terms of comfort, but also in the social context;
* Public sector building typology was developed, as an obligation of the country in the context of Directive 2012/27/EU.

Given the success of GED I and the need for further assistance to authorities at the state, entity, cantonal and municipal level, UNDP decided to proceed with a second phase of the project which included an expanded the scope of GED I. A mid-term review of the project was conducted in the fall of 2017, which provided important inputs for the development of GED II.[[9]](#footnote-10)

Description of the second phase of the GED Project

GED II started in 2018 as a logical continuation of GED I. Its primarily goal was to contribute to the creation of a favorable environment for investing in energy efficiency and renewable energy sources measures. The main assumption underlying GED II was that transformational change in the energy sector can only happen if the capacity and skills of the relevant institutions and professionals are strengthened in parallel with establishment of a system that enables financing for EE and RES infrastructure projects, while generating green jobs and reducing CO2 emissions.

Box 3: Additional Activities Added to Project’s Phase II

|  |
| --- |
| Additional activities planned for implementation through 2nd phase are:   * Drafting/updating of regulations on defining Nearly Zero Energy Buildings (NZEB), as well as providing capacity building for NZEB and understanding of renewable energy in public sector buildings; * Institutionalization of energy monitoring and reporting mechanisms/energy management at the municipal level for public sector buildings and public lighting, and introduction of EMIS at the municipal level; * Development and implementation of Energy Intensity Mapping application; * Development of Measurement and Verification (M&V) module within EMIS; * Preparation of the Cost-optimal analysis for public buildings in Bosnia and Herzegovina, as the country is obligated to report on cost-optimality to the Energy Community Secretariat; * Establishment of new financial mechanisms within Environmental Funds (ESCO Funding window); * Implementation of:   + Energy efficient public lighting systems in municipalities,   + Solar hot water systems and photovoltaic systems in public sector buildings,   + Infrastructural energy efficiency and renewable energy measures in public sector buildings; * Increasing public awareness of human development as result of clean/renewable energy and energy efficiency; * Installation of hybrid photovoltaic and solar systems (electricity and thermal heat generation) in remote areas (not connected to the electricity grid) without electricity in Bosnia and Herzegovina. |

The figure below shows the project’s immediate goals– (i) promoting investments in EE/RES; (ii) creation of green jobs; and, (iii) contribution to EU accession through support for authorities in the area of legislation and the capacity of the civil service responsible for EE matters. These goals were meant to create a favourable enabling environment for investing in EE/RES throughout Bosnia and Herzegovina.

Figure 5: Project Goals

The approach taken in the GED II project is quite comprehensive – an essential feature of a good project design that does not leave any major gaps in how it addresses a specific problem. Financing, development of policy and legislative frameworks capacity building for EE professionals and government officials, demonstration of the feasibility of EE improvements through practical initiatives, awareness-raising and research, generation of off-grid energy from RES, etc. – all these are crucial components of the project that form a comprehensive and well-rounded intervention.

The comprehensiveness of the project is also shown in the Theory of Change in the figure below (taken from the GED III project document which has a similar set of interventions), showing the objectives presented in the figure above and goes deeper in identifying the activities/outputs that are necessary to lead to the realization of these objectives.

Figure 6: Project’s Theory of Change[[10]](#footnote-11)

**Creation of a favorable environment for investing in EE measures in BiH**

**Contibute to BiH's EU accession  
(EPBD and EED directives)**

**Reinvestment of savings in local priorities, infrastructure and EE measures**

**Employment of domestic work force**

**Develop capacity and strengthen skills of Environmental Fund and MoFTER staff**

**Policy development assistance for EE/RES for different levels of Gov. in BiH**

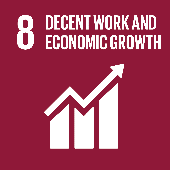
**To enable financing for EE/RES infrastructure projects in BiH**

**To implement cost-optimal, green jobs generating and emission reducing EE/RES infrastructure projects in BiH**

**To increase general public’s understanding of EE/RES benefits**

**To provide access to energy for off grid households in BiH**

**Increased EE/RES in SME's in BIH**



**Development of Detailed Energy Audits and QA; Adopting results and recommendations from the Study/Strategy by the relevant level of government**

***Development of 3 laws or by-laws in the field Energy Management, Energy Efficiency, Renewable Energy Sources, E-mobility, and environment***

**Co-financing for the implementation of EE infrastructural works**

**Implementation of Energy Efficient infrastructural works**

**Public awareness on benefits of energy efficiency, renewable energy, and reduction of emissions to air is increased**

**Installation of photovoltaic solar system in remote without access to electricity in BIH**

**Support to implementation of EE/RES projects in SME's in BIH**

As can be seen from the figure, all activities form a well-connected package of interventions that reinforce each other towards shared objectives.

In addition to the integrated nature of interventions, the design of the project presents a number of additional strengths, a few of which are highlighted below.

* ***Bottom-up approach*** – The bottom-up approach to promoting and undertaking energy efficiency is a key positive feature of this project. Given the country’s complex governance structure – including complicated state-entity interactions, fragmented administrative divisions and responsibilities, and slow planning processes – the project has targeted and engaged directly with those authorities which are responsible for the management of public buildings. This approach was motivated by the fact that the jurisdiction over public buildings is quite fragmented among various levels of government. Therefore, the project was designed to work with all levels of government - from the canton level, to entities, to the state. While doing this, the project was designed to introduce coordinated and harmonized processes and procedures (i.e. measuring, verification and reporting system, financial mechanisms for energy efficiency/renewable energy sources, etc.) across administrative boundaries with the objective of creating a systematic approach to decision making process on energy efficiency and renewable energy throughout the country.
* ***Full range of project cycle*** – Another positive feature of the project design is the coverage of the full range of project cycle for EE interventions – from design, revision, supervision, and implementation of energy efficiency/renewable energy measures. This is a much better approach compared to projects which only support sections of the cycle, such energy audits or measurement.
* ***Key role of EE information*** – The project has also been key in generating information about building energy intensity and real energy costs. This information is crucial for the estimation of the financial returns of the proposed measures. However, such information is impossible to obtain systematically in the absence of a comprehensive database. Hence, the importance of the Energy Management Information System (EMIS) system whose establishment and improvement has been supported by the GED project over time. The EMIS database established in the two entities now covers 5,800 (out of 7,600) buildings across the country.[[11]](#footnote-12) EMIS is an important tool in catalyzing EE investments as it helps decision-makers prioritize different investments by energy savings, capital requirement and pay-back period, making it easier to choose between various investment options.
* ***Development and implementation of the legal framework*** - The project was also designed to contribute to the establishment of a clear legislative framework, strategy and action plans, as well as reporting and monitoring mechanisms, at the respective levels of government. This has been an ongoing process throughout the two phases of the project. The basis for the development of the legal framework has been the law on energy efficiency adopted in RS in 2013, and in FBiH adopted in 2017. The focus of the project has been on helping authorities develop the necessary bylaws, as well as transposing the relevant European Union directives (more on this further in this report). The project was also design to address the serious concern that once adopted primary and secondary legislation does not get fully implemented. The project has addressed the lack of human and technical resources, lack of understanding and planning by various government levels, as well as the fragmented energy-related responsibilities for public buildings. The project has supported the implementation process not through the practical demonstration of EE/RES initiatives, but also through the adoption of the information system rule book, establishment of the energy management system at the state level, adoption of public buildings typology, etc.
* ***Importance of capacity building within government institutions*** – The various government entities at the entity, cantonal and municipal level with responsibilities for EE matters and owners of public buildings do not have the full capacity for the implementation of energy efficiency/renewable energy investments, representing a challenge for the sustainability and quality of investments. This challenge is further exacerbated by the lack of a harmonized framework at the state or entity level for how to undertake EE investments. To address this structural challenge, the project was designed to work with the key players in the area of EE, which include the Ministry of Foreign Trade and Economic Relations at the state level, Environmental Funds and the ministries responsible for EE at the entity level, and various cantonal and municipal stakeholders. The focus has been on strengthening the capacities of these institutions through different trainings, technical assistance, conferences and consultations on various topics related to energy efficiency, renewables, energy management, EU directives, as well as creating mechanism for data collection, monitoring, verification, and reporting mechanisms harmonized with the EE laws and bylaws of FBiH and RS.
* ***Change of mentality/social norms around EE*** – Another key feature of the project is its focus on raising decision-makers' awareness and knowledge on the benefits of energy efficiency improvements. The increase over time in the number of implemented projects and the constantly increasing level of government co-financing have clearly demonstrated that the project has contributed to increased interest and motivation by government decision-makers. The project has also worked actively to promote EE among the general population through large-scale media and social media campaigns (more on this further in this report).

### Project Results Framework

The project’s results framework is shown in the effectiveness section of this report in Table 10 on page 61. That table shows the achievement of each project target, as established at the initial stage of the project when the Project Document was adopted. This section focused on the adequateness of the results framework and the quality of identified indicators and targets.

The results framework consists of six outcomes, each with its own indicator, and 30 output indicators organized under the six outcome areas. This is a quite extensive results framework, given the large number of indicators identified. As such, it requires quite an intensive data collection and management process from the side of the project team.

Most indicators identified in the framework are quite relevant to the project activities and are specific in the sense that they measure a specific outcome or output without ambiguities. There are exceptions, however, which in some cases have created challenges for the project team in terms of how to measure certain indicators or how to interpret them – and this was obvious during the evaluation process which necessitated a detailed discussion of each indicator in the results framework in order to understand their meaning and the project team’s interpretation of them. The following are some key examples:

* Indicator SO1a is interpreted in a broad manner that includes achievements (in this case energy audits) conducted by other projects (see respective comment in Table 10). While the GED project might have incentivized some of these audits, they are not a direct result/contribution of the project itself – hence, the limited value of this indicator.
* A major weakness of many indicators is the lack of guidance on how they are measured and what exactly they mean based on the type of measurement that was conducted. For example, the first (outcome) indicator in the logical framework reads “*number of infrastructure projects directly and indirectly benefiting from improved financing mechanisms*”. It is not clear from this formulation what exactly it means for an infrastructure project to have benefitted directly or indirectly from improved financing mechanisms. This requires some guidance on what is meant by “direct”, “indirect” and “financing mechanism”. Similarly, another indicator (SO2) reads “*number of municipal authorities with reporting mechanisms in place*”. While this is a reasonable indicator directly related to the project, it is not clear how it could be measured because no clear definition of “reporting mechanism” is provided.
* Baseline and target values are not always clear and consistent. For example, the first (outcome) indicator and indicator SO4 are practically the same (in the interpretation of the project team), but their targets in the results framework are different for reasons that remain not understood. Similarly, indicator 1.2. is measured by the project team in the same way as the first indicator, as well as indicator SO4. However, the baseline and target presented in the result framework in relation to that indicator are not clear.
* An indicator such as SO3 *(% of increase of financial resources allocated for EE measures through the Fund by the end of 2020*) is not extremely valuable (see Table 10) because it only shows the amount of money budgeted by the Environmental Fund, rather than the amount of money actually spent. What ultimately matters when it comes to investments is the amount of money spent on a project rather than what was initially budgeted.
* Also, indicator 2.2 (*number of end-users trained on EMIS*) is not well-constructed, and hence not too meaningful. The assumption underlying this indicator is that the number of people trained should be equal to the number of buildings, which was not the case because in some cases one person of responsible for more than one building (i.e. a school with several branches).

In this situation where the meaning of many indicators was unclear as insufficient guidance was provided in the project design, the project team settled for their own definition of the measurement of the project’s indicators and on that basis proceeded with tracking these indicators over time. Ideally, these details should have been clarified upfront with clear guidelines in the Project Document. The definitions used by the project team for the measurement of results were clarified in the course of this evaluation and are shown in a separate column in Table 10.

### Project Stakeholders

This section provides a brief overview of the project’s main stakeholders, and in particular the role they were intended to play in the project.

***UNDP*** - The project was designed as a DIM project, meaning that UNDP assumed full responsibility and accountability for the overall management of the project, including achieving of the outputs and outcomes, efficient and effective use of resources, as well as the monitoring of activities carried out by other parties. UNDP’s main responsibilities were (i) providing project assurance services (ii) recruitment of project staff and contracting of consultants and service providers; (iii) overseeing financial expenditures against project budgets; and (iv) ensuring that all activities including procurement and financial services are carried out in strict compliance with UNDP procedures. To carry out project activities on a day-to-day basis, UNDP recruited a project team led by a Project Manager. All project team members had UNDP contracts. Also, all procurement processes were conducted using UNDP procurement rules.

***Government Institutions*** - The project was designed to involve and interact with the following national institutions, as the project’s main counterparts:

* At the state level, the ***Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina*** (MoFTER)[[12]](#footnote-13) is, among other things, responsible for defining policies and basic principles, coordinating activities and consolidating entity plans with those of international institutions in the areas of agriculture, energy, protection of environment and use of natural resources and tourism. The department for secondary energy and projects, within the Ministry, is one of the project partners. Department is in charge for sustainable energy (renewable energy and energy efficiency) issues, as well as for creation, coordination and/or implementation of energy projects together with relevant entity ministries.
* The ***Environmental Protection Fund of FBiH***[[13]](#footnote-14) and the ***Environmental Protection and Energy Efficiency Fund of RS***[[14]](#footnote-15) have been the project’s main partners at the entity level. These funds provide financing for cost-effective EE/RES projects in public buildings by providing matching grants. They typically require a benchmark level of co-financing by the end-user of a project (in the case of the GED project, the owner of the respective public building or lighting system). They main the EMIS database that provides energy-related information about public buildings in each entity. UNDP entered into agreements with these two funds to implement the infrastructure initiatives undertaken under the GED project, as well as provide technical and advisory support as will be seen in more detail further in this report.
* In addition to the above Government entities, GED II has involved the ***Ministry of Spatial Planning*** and theMinistry of Energy, Mining and Industry in the Federation, and the ***Ministry of Spatial Planning, Civil Engineering and Ecology*** and the ***Ministry of Industry, Energy and Mining*** in Republika Srpska.
* The project has also engaged with levels of government, including ***cantonal*** and ***municipal governments*** which have benefited from improved infrastructure, as well as technical and organizational capabilities (as will be seen further in the report).

***Public End Users*** - Public end-users represent the base of the pyramid in the bottom-up approach taken by the GED project to its capacity building support. Due to many years of neglect towards public buildings and the inadequate condition of those buildings, owners of public buildings are in dire need for energy efficiency investments. Also, households living in rural areas off the power grid lack basic services needed for decent living. By providing them with the photovoltaic solar systems (electricity generation), the project was designed to help these households produce electricity for their own needs, thus facilitate their living conditions. The wider society is another intended beneficiary of the project. Public awareness campaigns were intended to increase the community’s knowledge and change perceptions, attitudes, and behaviours about energy efficiency and renewable energy sources.

***Government of Sweden*** – Sweden joined the GED project in 2015, two years after the project was launched and at a point when the first tangible results of the project were visible. Sweden has provided significant financial support for the GED project in its first and second phases (as will be seen in more detail further in this report) and has committed to supporting the third phase which is under preparation.

### Management Arrangements

The project’s management arrangements, laid out in the Project Document, are shown in Figure 7 below.

The project was overseen by two boards – a Steering Board and a Project Board. The Steering Board was conceived as the highest-level body and as such responsible for the strategic alignment of project activities with relevant policies of organizations involved. The Steering Board has consisted of the following members:

* UNDP Deputy Resident Representative;
* Sweden, Head of Development Cooperation;
* Environmental Funds of FBiH and RS, Directors of funds.

The Project Board was conceived to have a more operational nature and was tasked with consensual decision-making on all key matters related to the project, as required by the Project Manager, including recommendation for UNDP/Implementing Partner approval of project plans and revisions. Project Board decisions were made in accordance with standards that ensured best value for money, fairness, integrity, transparency and effective international competition. The Project Board was comprised of the following institutions:

* MoFTER;
* BiH Environmental Protection Fund;
* RS Environmental Protection and Energy Efficiency Fund;
* Sweden, Officer in charge of the Environmental and Climate Change Programme;
* UNDP CO.

The Project Manager has been responsible for the management of the project on a day-to-day basis within the constraints laid down by the Project Board. As can be seen from the organigram below, the project team was conceived to consist of the following positions:

* Two technical engineers
* One field officer
* One EMIS support officer, assisted by two additional staff
* Two technical assistants
* One administrative assistant.

As it turned out, during the implementation stage the Project Team was smaller and consisted of the following staff:

* Project Manager
* Project Officer for Infrastructure
* Technical Associate
* Project Associate
* Energy Management Assistant.

The Project Assurance role was provided by UNDP CO Energy and Environment Sector Leader, Energy and Environment Program Manager, Energy and Environment Programme Associate and Energy and Environment Communications Officer. In particular, the Energy and Environment Sector Leader took primary responsibility for overseeing the project and regularly communicating the results of oversight to relevant and concerned parties.

Overall, the design of the management arrangements, as shown in hindsight by the implementation phase, was efficient and effective. The structure was a result of the project’s evolution from phase I to phase II. The only structure which seems to be redundant is the Project Steering Board – based on the data collection for this evaluation, it is not clear what the value added of this structure has been. In the way the project has been set up, the Project Board could play the role of the Steering Board without any limitations.

Figure 7: Project’s Organigram



## Project Implementation

### Key Project Milestones

As has been noted already, GED II is a continuation of a previous phase of the project – GED I. Th GED initiative started in the fall of 2013, when UNDP made an agreement with Environmental Fund of the Federation of Bosnia and Herzegovina on initiating what became known as GED I. The project started with four infrastructure projects for the first reporting period, followed by another four infrastructure projects in the second reporting period. These first infrastructure initiatives proved to be a success among participating local governments, as they generated a lot of interest among them, with an average 40% rate of co-financing that far exceeded the 25% planned. As can be seen in the timeline below, the Government of Sweden joined the GED initiative in 2015 with a total of contribution of US $ 8.3 m for the first phase of the project (GED I). Sweden’s participation in the project expanded the number of infrastructure initiatives for 2015. In addition to this, the amount of co-financing by government increased, leading to the completion of a total of 28 infrastructure initiatives instead of the 20 that were planned in the Project Document. By 2016, co-financing had exceeded 66% of total amount of implemented measures, which allowed for the implementation of more than 40 infrastructure projects.

Figure 8: Project Milestones



In the period August-September 2017, GED I underwent a Mid-Term Review which assessed project results and achievements and provided recommendations for further progress. The review provided a pretty positive assessment of the project, which constituted the basis for the decision to further proceed with the second phase based on the lessons learned and foundations laid in the first phase.

The Local Project Appraisal Committee (LPAC) meeting for GED II was held in January 2018, whereas the Project Document was signed on 24 January 2018. Project activities were initiated in February 2018. For the second phase, the Swedish Government provided a total of US$ 7 m.

Given the solid infrastructure that had been laid out through GED I, the initiation of the second phase was quite fast and efficient. Board meetings have been organized at the end of each year to review project progress over the course of the respective year and discuss the work plan and budget for the following year. The Project Board meeting for 2018 was organized on 12 December 2018, for 2019 on 20 December 2019 and for 2020 on 15 December 2020.

As can be seen from the dates above, the pace of activities under this project has been pretty rapid. No time has been wasted between project phases or project activities – which is often the case in similar projects. Also, board meetings have been held with impressive regularity, sticking to usual timeframes and plans. Some delays have occurred in the implementation of certain activities; the major ones outside the direct control of the project team (the most notable here is the cancellation of the activity on the promotion of EE loans under the “Revolving Fund”). These delays are discussed in more detail in the “efficiency” section of this report. In light of some outstanding activities, the project team has submitted a request for a no-cost extension of the project until the end of 2021.

### Roles and Responsibilities

For the most part, the project’s management arrangements presented in Figure 6 above have been maintained without modification throughout the project’s implementation. The following is a brief description of the roles that the different project bodies/structures have played.

* The ***Project Board*** has met once a year to review the project’s strategic alignment, assess progress made in the implementation of activities and discuss project plans. The board has approved annual project work plans and budgets and has authorized major deviations requested by the Project Manager. The board has been composed of representatives of organizations identified in the project document. UNDP has been represented by the Energy and Environment Sector Leader, whereas SIDA by the National Programme Officer. The environmental funds have been represented by the heads of the energy efficiency units, whereas MoFTER by the head of the energy unit.
* The ***Project Team*** has been responsible for the implementation of project activities on a day-to-day basis. It has been led by a Project Manager with responsibilities for ensuring that the project produced specified results to the required corporate standards and within the constraints of time and cost. The Project Manager has been assisted by a Technical Associate and a Project Assistant (Associate). These three positions have constituted the initial core project team. At a later stage, the project hired a technical expert on infrastructure projects and another expert on the EMIS system. The number of project staff in reality turned out to be lower than what was planned in the Project Document. Some positions – such as those related to EMIS – were taken over by other projects, such as the Urban LED project. The communications officer was shared by all UNDP projects – a good practice that UNDP Bosnia and Hercegovina has established for some time now. Overall, a small project team has delivered a considerable amount of resources – especially, when considering the complexity of the large number of infrastructure initiatives undertaken through the GED project. Project staff were selected on a competitive basis in accordance with the relevant UNDP rules and procedures. Albeit small in size, the Project Team has been well structured and effective. No staffing issues or inefficiencies were reported by project stakeholders during interviews for this evaluation.
* The ***UNDP CO*** has provided effective fiduciary management of project resources and financial reporting. It has received donor contributions, disbursed funds as per defined activities and consolidated the periodic financial reports and the final financial report. It has been responsible for the coordination of activities, including coordination and compiling the annual work plan and narrative reports, monitoring of targets, calling and reporting on Project Board meetings, facilitating the final evaluation, and reporting back to the Project Board. The UN CO has engaged the following staff members in this project - (i) Energy and Environment Sector Leader has overseen the implementation on daily basis, including quality assurance and monitoring and evaluation; (ii) Programme Support Officer has reviewed the budgets and monitored project delivery status; (iii) Head of Operations Unit has ensured compliance with overall fiduciary standards of UNDP; (iv) UNDP Resident Representative overseen the process, liaised with high-levels of the Government and advocated for policy changes proposed by the project.
* ***Relevant State Institutions*** - As noted previously, a significant number of government institutions have been involved as implementers, providers of co-financing roles or as beneficiaries. These organizations have played a crucial role in the project. The rest of this report will focus on outlining the ways in which they have contributed to project activities or have benefited from them.

### Key Implementation Features

Some of the project’s main features were discussed under Section 3.1. on project design (project approach and logic). This section outlines some additional features more relevant to the implementation process.

GED II was executed under the Direct Implementation Modality (DIM),[[15]](#footnote-16) with UNDP staff responsible for project implementation. Out of the six project components (PCs), the Swedish Government contributed to the following 4 components:

* PC 1 – Capacity Building
* PC 4 – Infrastructure Measures
* PC 5 – Public Awareness
* PC 6 – RES Solutions for Off-Grid Households

Sweden has allocated its funds according to specific project components rather than providing a lumpsum amount for the whole project. The utility of such strict earmarking is not clear. Given the interconnectedness of all the components of this project – which has been discussed in the design section – it would seem more appropriate to allocate funding for this project in its entirety, without breaking financing into silos which create restrictions and inflexibility in the planning process.

***Inclusiveness*** - One of the most notable features of this project is its inclusiveness. GED II has not only supported government institutions of Bosnia and Herzegovina at all levels – be it the state, entity, cantonal or municipal level – but it has also engaged all partners very actively and transparently into project phases. The project was highly rated for its openness and transparency by all project partners interviewed for this evaluation. It is not a coincidence that the project was able to mobilize such a large amount of co-financing by government partners at all levels of governance – those contribution clearly demonstrate a high level of trust in the project.

***Competitive and Data-based Decision-Making*** – Another key feature of the project is the strong data basis that underpinned decision-making. Many similar EE projects are carried out with limited information. By contrast, GED II activities have benefitted from the rich information available in the EMIS system. The applications received in response to the project’s public calls for infrastructure initiatives were assessed on the basis of indicators from the EMIS system – this included the analysis and ranking of received proposals, selection of best options for conducting detailed energy audits, conduct of techno-economic evaluations, decisions on investing, entering financial agreements, project design, project revisions, tendering, and infrastructure works and commissioning.

***Lessons Learned and South-South Cooperation*** - As noted in the design section, GED II has rested on and fully utilized lessons learned from the previous phase. Also, given the well-organized nature of the Environment and EE Team in the UNDP CO,[[16]](#footnote-17) the project has also fully benefitted from lessons from related UNDP projects and best practices. The project has also established good cooperation with UNDP country offices in Croatia and Serbia through exchanges of experience and lessons learned. UNDP Croatia is the first in the region to establish an EMIS system,[[17]](#footnote-18) from which UNDP Bosnia and Herzegovina drew many lessons. Experience has also been drawn from UNDP Serbia which is currently implementing a similar project[[18]](#footnote-19) whose objective is to introduce and support the implementation of municipal Energy Management Systems (EMS), including a national Energy Management Information Systems (EMIS) to increase energy efficiency investments in public buildings.

***Communications*** – The project had a strong communications component, partially due to the nature of the activities at its center. A communications plan was developed and support was provided by the communications expert in the UNDP CO that is shared by all the projects in the E&E portfolio. Energy efficiency is as much about financial and policy incentives as about mentality and social norms. Project results were disseminated within and beyond the project intervention zone through information sharing networks and forums. The following communication channels were used: (i) media relations – i.e. media advisories, press releases, press events related to different events, highlighting key project results; (ii) events i.e. workshops, trainings, conferences, exhibitions, etc.; (iii) promotional and educational materials e.g. reports, brochures, leaflets, stories; (iv) digital promotion e.g. photo stories, video stories, social media posts, website, web banners, etc.

***Monitoring and Evaluation*** - The project’s monitoring was performed on the basis of the indicators identified in the project’s results framework. As noted previously, the results framework has consisted of relevant indicators, although some of them were not well-specified and required the project team’s interpretation. Other monitoring instruments utilized by the project team have been the result and risk matrix, annual work plans, quarterly work plans, detailed financial annual and quarterly plans (in accordance with UNDP standards), annual reports (including an annual financial report), and annual project reviews by the Project Board each year. Day to day monitoring of implementation progress has been the responsibility of the Project Manager based on annual work plans and related indicators. The Project Team has kept the UNDP CO abreast of delays or challenges in implementation process. UNDP’s Environment and EE team has contributed with quality assurance of the project. When needed, the CO has provided appropriate support or has taken corrective measures in a timely and remedial fashion. The Project Board has also played a critical role in providing quality assurance through its oversight role discharged primarily at the annual meetings organized each December. A major mid-term project review was foreseen in the Project Document to be undertaken in late 2019 in order to provide feedback from stakeholders, and if needed, allow adjustments to the project by the Project Board. However, such a review did not take place and the only evaluative instrument used in the course of GED II is this terminal evaluation.

***Knowledge Management*** - Over years of operation through two phases, the GED project has generated an immense body of knowledge. The upcoming third phase implies that further knowledge is expected to be generated. Knowledge management and sharing has been an increasingly important part of the project. The project team has deployed tools to ensure knowledge management and sharing and awareness-raising on EE matters to contribute to mind-set shifts among local administrators and decision-makers. The project has also promoted the exchange of information and dialogue among a wide set of stakeholders (specialists, local governments, academia and think-tanks, domestic and international networks, etc.). The project has employed several knowledge management approaches – i.e. preparation and publication of guidelines/tools, experience sharing at international events, storytelling workshops,[[19]](#footnote-20) periodic bulletins, etc. The project has made extensive use of social media to augment the outreach.

### Project Financing

The core financing of the GED II project has been provided by the Government of Sweden. As can be seen in the figure below, Sweden’s total contribution for both phases has amounted to US$ 15.3 m, whereas for GED II it has amounted to US$ 7 m.

Figure 9: GED II Financial Contributions

|  |  |  |  |
| --- | --- | --- | --- |
|  | **GED I** | **GED II** | **TOTAL** |
| **SWE** | 8.3 mil. USD | 7.0 mil. USD | 15.3 mi. USD |
| **LOC** | 12.2 mil. USD | 11.1 mil. USD | 23.3 mil. USD |
| **Total** | 20.5 mil. USD | 18.1 mil. USD | 38.6 mil. USD |

A notable feature of the GED project has been the provision of co-financing by the respective governments for infrastructure initiatives undertaken in the buildings under their ownership. The project was actually designed to involve mandatory co-financing from local governments/end-users in order to be eligible for the implementation of EE/RES measures. The maximum grant provided by GED I was up to 80% at the start of the project. Upon Sweden’s involvement in 2015, it was reduced to a maximum of 50%, whereas in GED II the project’s maximum contribution did not exceed 33% of the total investment. In the upcoming GED III, the level of grant that will be provided through the Swedish contribution will be up to a maximum of 25%.

For both phases of the project, the total amount of co-financing has been US$ 23.3 m, of which US$ 11.1 m was generated in the second phase. Thus, under GED II, the amount of co-financing was about 50% larger than the Swedish contribution. The co-financing provided by local governments/end users brought the total amount of financing available for both GED phases to US$ 38.6 m – a significant contribution to the country’s energy efficiency sector. Such leverage from all levels of government is not only an indicator of trust, but also a factor of efficiency because when resources in a specific sector such as energy efficiency in public buildings get pooled together from both government and non-government sources in such a large scale as in this project, the scope for economies of scale is significant. It is also noteworthy that GED II was able to expand the scope of synergies with other activities by generating parallel financing by other projects and organizations in the amount of about US$ 1 m.[[20]](#footnote-21) Parallel financing required close coordination with the respective partners – such as the World Bank – because the renovation of the same building required a clear division of labour and financial contributions.

### Major Challenges and Adaptive Management

The biggest challenge that the GED project has been the country’s complicated governance structure, which is also present in the area of energy. The sector is managed through a quite fragmented system of decision making, responsibilities and accountability. Progress on any activities requires a lot of negotiation with various stakeholders at all levels. Something that would require one decision in a more centralized system, requires multiple decisions and approvals in the case of Bosnia and Hercegovina. Also, the absence of the energy efficiency laws has constituted a daunting challenge for the team, as many activities were dependent on the legal framework. However, as will be seen further in this report, the team was able to deliver on most of the planned activities and financial resources by adroitly navigating the country’s complex decision-making landscape. It must be noted here that thanks to many years of UNDP’s engagement in this area and the trust it has built with the local stakeholders, many of these challenges have been overcome quite successfully and under the circumstances Bosnia and Herzegovina has made good progress in this area.

A major specific challenge encountered by the project was the decision by the Environmental Fund of the Federation to freeze the Revolving Fund that had been established in 2016. GED II had been designed on the premise that the Revolving Fund would be operational not only in the Federation, but also in RS where it was actually never fully established. Without any revolving fund available in both entities, the project was not able to fulfil its objective on non-grant financing of EE projects. In response to this situation, the project team adjusted its approach and started cooperating with the other UNDP project (Urban LED) which has been assisting the Federation Environmental Fund in the establishment of an “*ESCO window financing*” mechanism as an alternative non-grant-based financing model. Furthermore, the GED project team made the decision to discontinue the series of training that were planned on the topic of the “Revolving Fund” as they had obviously become redundant by 2019.

The delay in the Government’s approval of the EE by-laws also delays the project activity related to the “*measurement and verification*” (M&V) module within EMIS. This also led to delays in the organization of trainings on EMIS, which also subsequently delayed the pace of the entry into the EMIS database of the information on public sector buildings. The project team has worked to circumvent these challenges and now expects to complete these activities by the end of 2021 – which also coincides with the end of phase II, in case the request for a no-cost extension will be granted.

The project’s challenges were further compounded by the breakout of Covid-19 in early 2020. The pandemic had a significant impact on project implementation. Some activities were postponed in the initial months of the pandemic. By April 2020, the project has started conducted trainings online. The pandemic is also impacting the budgets of the respective levels of government, with a direct effect on infrastructure initiatives, which accounted for approximately 74% of the total 2020 project delivery. Co-financing from local governments is expected in the amount of 50% to 70% of the total value of the investment which has been a challenge from the beginning of the COVID-19 situation. Many uncertainties have emerged in the budgets of the sub-national/local governments planned for infrastructure works for energy efficiency and renewable energy measures.

## Project Achievements

This section is focused on the following key criteria of UNDP evaluations: i) ***relevance*** – the extent to which the project has been relevant to country priorities and needs; ii) ***effectiveness*** – whether the project has been on track in the achievement of desired and planned results; iii) ***impact*** – the extent to which the project was able to effectuate actual change; (iv) ***efficiency*** – whether the process of achieving results has been efficient; v) ***sustainability*** – the extent to which the benefits of the project are likely to be sustained; and, (vi) ***coherence*** – the extent to which the project has been coherent, coordinated and complementary to other initiatives in the area. This section also provides a brief assessment of the project’s contribution to gender equality and empowerment of women.

### Relevance

* ***Country Needs and Priorities*** - The project has been highly relevant for the energy efficiency sector in Bosnia and Herzegovina by improving the capacity and skills of the relevant institutions and professionals, establishing system that enables financing for EE and RES infrastructure projects while generating green jobs and reducing CO2 emissions and creating overall favourable conditions for investments in RES/EE (more on this further in the report). In particular, GED II has been fully in line with Bosnia and Herzegovina’s framework energy strategy[[21]](#footnote-22) which introduced energy efficiency as one of the main pillars of the country’s energy sector. It has supported the implementation of several measures and programmes outlined in the framework in relation to the buildings sector. As has been noted, project interventions have covered all geographical areas of Bosnia and Herzegovina and have supported institutions at all levels – state, entity, cantonal and municipal. Another notable feature of the GED project has been the strong ownership by end-users during the implementation process, demonstrated in particular through their co-financing of EE/RES investments. It should be added that the project has made contributions to several SDGs, including poverty reduction (SDG1), improvement of health (SDG 3) and education (SDG4), gender empowerment (SDG5), access to sustainable energy (SDG 7) and fight against climate change (SDG 13).
* ***EU Accession*** - GED II has also contributed to the country’s accession process to the EU. The integration process is a crucial goal of Bosnia and Herzegovina. However, due to its administrative complexity, political challenges and lack of human and financial resources, Bosnia and Herzegovina needs substantial assistance on its path to EU accession in form of capacity building and strengthening of EU related processes, especially on the transposition of EU directives into the national legal framework. If EU directives and primary and secondary legislation on energy efficiency and renewable energy are expected to be enforced, it is essential that lower-level governments understand obligations related to targeted energy savings, in particular goals set for public buildings, and develop the necessary energy management decision-making capabilities within their jurisdictions. Furthermore, Bosnia and Herzegovina is a member of the Energy Community (EnC) and a signatory of the EnC Treaty. As such, it is required to adopt the core EU energy legislation.[[22]](#footnote-23) GED II has contributed to Bosnia and Herzegovina’s EU accession process through technical assistance to governments on the transposition and implementation of specific EU directives. The main directives that have been targeted by the project have been the following: (i) Energy Efficiency Directive (EED); (ii) Energy Performance Building Directive (EPBD); and, (iii) Renewable Energy Directive (RED) – discussed in more detail in the following section on effectiveness.
* ***International Agreements*** - GED II has also been in line with the requirements of the international agreements signed and ratified by Bosnia and Herzegovina. In particular, it has been fully in line with and has contributed to the United Nations Framework Convention on Climate Change (UNFCCC) which Bosnia and Herzegovina signed in 2000 and the Kyoto Protocol to the UNFCCC which the country signed in 2008 as a non-annex I country.[[23]](#footnote-24)
* ***UNDP Programme Priorities*** - The project is also relevant with UNDP’s country programme priorities[[24]](#footnote-25) and the UN development framework.[[25]](#footnote-26) Since 2009, UNDP has been one of the leading agencies in Bosnia and Herzegovina promoting energy efficiency, initially under the MDG-F Environment and Climate Change programme (completed in May 2013). The focus of UNDP's work has been on the pilot introduction of energy efficiency in the public sector across the country through the implementation of energy efficiency projects and the introduction of EMIS for public sector buildings. It should be also noted here that the UNDP CO for Bosnia and Herzegovina is a member of the Energy Community Secretariat’s Coordination Group on renewable energy and energy efficiency. As such, UNDP CP coordinates all relevant projects all with the Secretariat.[[26]](#footnote-27)
* ***Swedish Government*** – The GED project is one of the flagship projects of the Government of Sweden in Bosnia and Herzegovina. It contributes to following five perspectives of Sweden’s priorities:
  + *Poverty reduction* - GED II has contributed to poverty reduction in several ways, mainly by generating green jobs through infrastructure measures, but also through other activities. As a result of GED interventions, public budgets have been re-allocated from non-core expenditures in public services sectors (i.e. payment for energy bills by public building end-users) to investment in core activities (i.e. spent on procurement of new medical equipment, educational needs, etc.) resulting in a larger share of governmental spending on essential services, such as education and health.
  + *Conflict perspective* - As GED II supported legislative and policy changes in both entities, and given that the EU directives obligate country to report at the state level, the project has forged cooperation and harmonization both horizontally at the cantonal level and vertically among entities and state by creating a common energy management system, information system and reporting mechanism.
  + *Democracy/human rights* - A rights perspective was taken by the project to ensure that public policies, legislation, financing mechanisms and service outcomes supported within the project were non-discriminative and offered equal opportunities (access to services, funding, employment opportunities) for all, regardless of their age, ethnic, sex or social status. Highly participatory approached in policymaking, legislating or funding assisted by the project reinforced the principle of transparency. Wide publicity of project activities and measurable results reinforced the accountability principle. Adopting a human rights approach, the project conveyed the message that universal access to energy services is becoming a common right of citizens.
  + *Gender* - The project also established create linkages between women’s empowerment, sustainable energy and sustainable development since project-supported policy, regulatory and investment actions took into account gender equality and equal benefits for men and women in their application (this dimension is expounded in more detail in the section on Gender Equality and Empowerment of Women further in this report).
  + *Anticorruption* - The project has strengthened energy management decision making processes with a clear allocation of responsibilities in decision making, eligibly criteria for financing EE/RES projects and a systematic monitoring of results. This has contributed to the creation of a transparent system involving all relevant parties. Moreover, UNDP’s internal standard operating procedures and processes assured transparency and accountability. Government counterparts participated directly in the design, as well as implementation and monitoring of project activities through the Project Board, as well as regular meetings with project and programme staff to review project results achieved and make joint decisions.

Overall, the project has been very relevant to the country’s needs and priorities, and fully aligned with and contributing to the national policy framework. It has supported Bosnia and Herzegovina’s accession process to the EU and the adoption of international agreements and conventions. The project has also been very relevant to UNDP’s country programme priorities and the UN development framework, as well as the programmatic priorities of the development programme of the Government of Sweden for Bosnia and Herzegovina.

### Effectiveness

The project’s achievements against the results framework laid out in the Project Document are analyzed in detail in Table 10 on page 61. Colour-coding is used in the table to show which targets have been achieved and which are still in progress. The following is a brief summary of what the project was able to achieve and not achieve on the basis of the objectives set at the beginning. The discussion is organized according to the project components defined in the Project Document.

**Project Component I (*Capacity Building & Legal Framework*)**

The table below summarizes the project’s main achievements under the first component based on the indicators identified in the results framework. As the targets in the project’s results framework were framed in a cumulative fashion, the numbers in the table below include the baseline – therefore representing achievements for both phases of the GED project. For an understanding of the achievements of phase II alone, it is necessary to examine Table 10 and focus only on the 2018-2020 period.

Table 3: Project Achievements under Component I

| **Indicator** | **Baseline - GED I** | **Achievement GED II** | **Overall Achievement** |
| --- | --- | --- | --- |
| Number of detailed energy audits conducted (target value: 120) | 140 | 196 | 336 |
| Number of investment decisions made based on evaluation of detailed energy audits (target value: up to 45) | 65 | 110 | 175 |
| Number of Fund staff participating on annual capacity development training on energy efficiency, EMIS and EE/RES policy (target value: 2) | 10 | 8 | 18 |
| Number of Fund staff actively working on EMIS investment decision making process cycle, monitoring, assessing and evaluating energy indicators (target value: 2) | 4 | 8 | 12 |
| Number of stakeholders participated on training programme for energy management, skills, and knowledge development and NZEB (target value: at least 600) | 500 | 468 | 968 |
| Number of female energy professionals participated on training programme for skills and knowledge development and NZEB (target value: at least 120) | 90 | 196 | 286 |
| Number of Energy Intensity Mapping applications developed (target value: 1) | 0 | 1 | 1 |
| Measurement and verification (M&V) module within EMIS enabled | 0 | In Progress | In Progress |
| Nearly Zero-Energy Public Buildings integrated into EE/RES by-laws in BiH | 0 | In Progress | In Progress |
| Number of cost-optimal analysis for public buildings developed (RS, FBiH, BiH) (target value: 3) | 0 | 3 | 3 |
| Number of persons employed for energy management | 0 | 3 | 3 |
| Number of energy managers – coordinators and energy managers trained for energy management | 0 | 107 | 107 |
| Update of the Study on the state level of energy efficiency for buildings owned or used by state government institutions | 0 | In Progress | In Progress |
| Energy efficiency operational plan for buildings owned or used by state government institutions | 0 | In Progress | In Progress |

***Detailed Energy Audits -*** As can be seen from the table above, the project supported the conduct of 196 detailed energy audits, which led to 110 investment decisions. Based public calls and data collected through the environmental funds through the EMIS system (focused on energy, costs and emissions), a technical/economic prioritization of public sector buildings was conducted to select those with the highest energy conservation potential for a detailed energy audit.

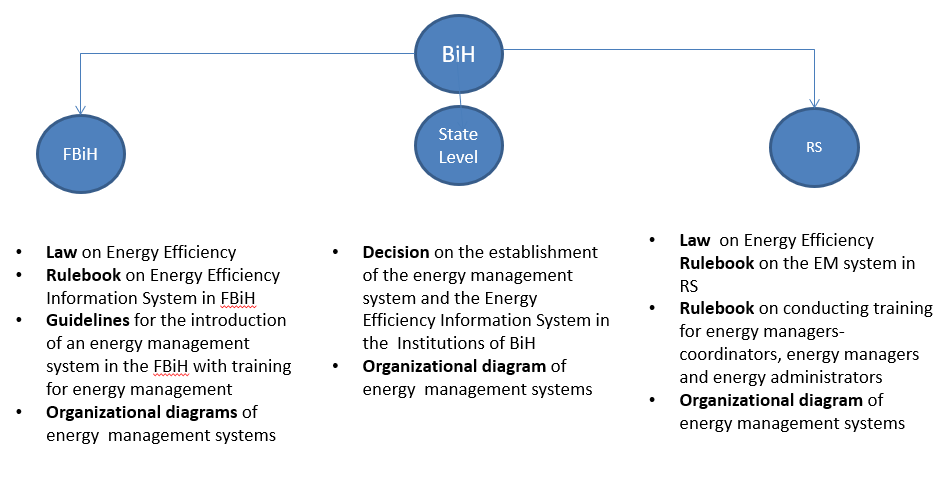
***Capacity Building*** – Drawing on the capacity building experience of the first phase (see Box 4 for a summary of GED I’s capacity building activities), GED II has provided training and technical assistance on various aspects of energy efficiency, renewable energy sources and energy management. Target groups have included Environmental Protection Funds, governments at all levels, municipalities, Energy Service Companies (ESCOs), public institutions, building owners, public utilities, small and medium enterprises, producers, distributors, installers, as well as engineers and professionals. A lot of training has centered around the EMIS database – the development of energy indicators, the analysis of data and production of reports, prioritizing of public sector buildings for energy audits and implementation of energy efficiency measures, monitoring and verification of energy and costs savings and emission reductions, etc. The project has also provided technical assistance in the preparation of the rulebook on the energy management system[[27]](#footnote-28) and the implementation of obligations of the energy management system.[[28]](#footnote-29) The following box provides a summary of the capacity building activities under GED I, which laid the foundations for GED II activities.

Box 4: Capacity Building Programme under GED I

|  |
| --- |
| GED I provided an annual training programme which covered the following key topics:   * Obligations of the local communities, public institutions and small and medium enterprises, according to the adopted laws on energy efficiency; * Financing energy efficiency measures through Revolving Funds; * Enhancing energy efficiency in public and commercial buildings; * Methodology for applying, preparing and filling in applications for Revolving Fund; * Energy efficiency of water supply, public lighting systems and district heating systems; * Revitalization of the electrical infrastructure for small and medium enterprises; * Energy efficiency in industrial processes; * Replacement of primary fuel in power plants with environmentally friendly energy source; * General benefits of Revolving Fund.   As a result, an in-depth understanding of the topics was achieved and participants were satisfied with the lectures ‘s emphasis on practical and concrete examples. |

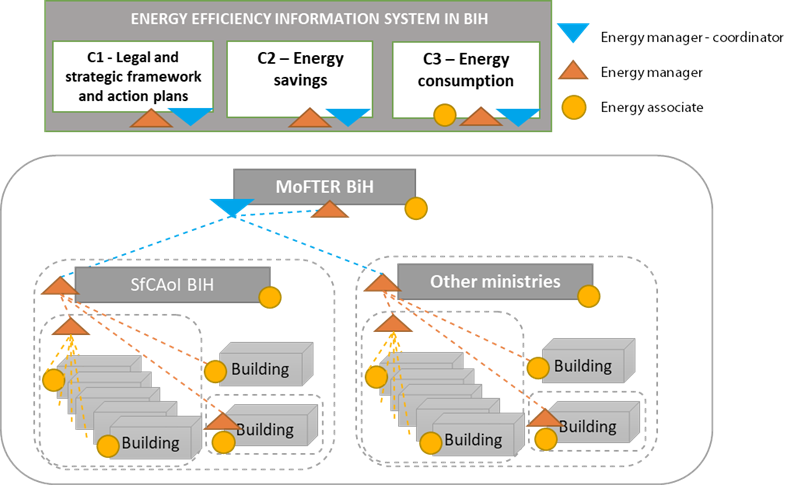
The project has also supported the establishment of the energy management system at the state level[[29]](#footnote-30) (see figure below), working closely with MoFTER and the Service for Common Affairs of the Institutions of Bosnia and Herzegovina (Service).[[30]](#footnote-31)

Figure 10: Energy Management System



GED II has also supported the recruitment and training of three energy managers within these two institutions (see figure below for the roles of these managers) and covered the salaries of these positions for a provisional period of 18 months. These positions are crucial in the country for the analysis of EE data and formulation of policy proposals.[[31]](#footnote-32)

Figure 11: Organization of Energy Management System at the State Level



An ongoing activity of the project that has not been completed yet is an extensive study of the state of energy efficiency in identified buildings owned or used by state government institutions. Another ongoing activity is the creation of the Energy Efficiency Operational Plan for buildings owned or used by state government institutions. The project team expects to complete these activities by the end of 2021.

***Nearly Zero Energy Buildings (NZEB)*** - When it comes to understanding and capacity building of NZEB, it is first necessary to define the term NZEB, give it an applicable definition and prepare the necessary regulations, by-laws, etc. One of the outstanding project activities is the drafting of regulations related to the NZEB[[32]](#footnote-33) which is expected to be completed by the end of 2021. A training has already been organized by the project on the topic of NZEB with the participation of 968 energy professionals, of whom 286 were female.

***Energy Intensity Mapping & Measurement and Verification Module***

The Energy Intensity Mapping application was developed in 2019 as a new EMIS module to provide an easy visualization of energy intensity in buildings through a virtual and interactive map with a user-friendly interface.[[33]](#footnote-34) With regards to the Measurement and Verification module within EMIS, the preparation phase started in 2019 but activities are still in progress.[[34]](#footnote-35) The project team expects to complete this activity by the end of 2021.

***Cost-optimal Analysis for Public Sector Buildings*** - The cost-optimal analysis for public buildings[[35]](#footnote-36) was finalized in 2019. It determined the cost-optimal levels of energy classes of public buildings and tested new climate data.[[36]](#footnote-37) The study concluded that in order to compare the minimum energy efficiency requirements defined in regulations of Republika Srpska and the Federation of Bosnia and Herzegovina, it is necessary to improve existing regulations and define new requirements for primary energy (Eprim) and final energy (Edel) for reference public buildings.

***Approximation to EU EE Legislation*** - GED II has also contributed to Bosnia and Herzegovina’s EU accession process, helping in particular with the transposition of three Eu directives into the national legislation. These directives include the EPBD (Energy Performance Building Directive), EED (Energy Efficiency Directive) and RES (Renewable Energy Directive) directives. The box below provides a more detailed summary of these directives.

Box 7: Project Support Related to EU Directives

|  |
| --- |
| ***Energy Efficiency Directive (EED)***  Even though EU Energy Efficiency Directive (EED) is not still obligatory, Bosnia and Herzegovina has signed the Energy Community Treaty that requires it to implement Article 5 of the EED, which concerns the renovation of public buildings. GED II contributed to implementation of Article 5, especially in establishing inventory of central government buildings, since all data from EMIS and from conducted Typology for Public Buildings in Bosnia and Herzegovina could be a useful basis for public inventory. Bosnia and Herzegovina has to submit its first report on cost-optimality to the Energy Community Secretariat. Calculations of cost-optimality for residential buildings are realized through activities financed by German Agency for International Cooperation (*Deutsche Gesellschaft für Internationale Zusammenarbeit - GIZ*) in Bosnia and Herzegovina, and calculations on cost-optimality for public buildings are realized within the GED 2nd phase project. These documents will enable Bosnia and Herzegovina to redefine its secondary legislation related to the EPBD and define new and accurate energy classification of public sector buildings, as well as to introduce stricter levels of energy requirements for new and buildings which are going through reconstruction.  ***Energy Performance of Buildings Directive (EPBD)***  To transpose Directive 2010/31/EU, Republika Srpska adopted the Law on Physical Planning and Construction in May 2013. This Law incorporates the main requirements of the Directive and creates a basis for further transposition through secondary legislation. In the Federation of Bosnia and Herzegovina, the Law on Physical Planning and Land Utilization was adopted in 2010. Within this general framework, secondary legislation on the methodology for the calculation of energy performance of buildings, energy audits of buildings and energy certification of buildings has been adopted, and implementation has started. A training program for energy auditors and authorized companies for certification of buildings is in place. The degree of compliance with Directive 2010/31/EU on the energy efficiency in buildings differs between the entities. Overall, Bosnia and Herzegovina still fail to comply with that Directive. In the Federation of Bosnia and Herzegovina, the Directive’s requirements related to calculation methodology for minimum energy performance of buildings, energy audits and energy certification of buildings are already transposed through the existing Law on Physical Planning and Land Utilization, as well as respective by-laws. However, certain issues related to the Directive still need to be completed, i.e.: definition and plans for achievement of nearly zero-energy buildings, regulation on inspection of heating and air conditioning systems, etc.  Directive 2010/31/EU was transposed in the Federation of Bosnia and Herzegovina by the Law on Energy Efficiency from 2017, the Law on Physical Planning and Land Utilization from 2013 and several bylaws. In Republika Srpska, the key requirements of Directive 2010/31/EU were implemented by the Law on Physical Planning and Construction from 2013, including setting minimum energy performance requirements for new and existing buildings, certification of buildings and energy audits of buildings. The EPBD also contains an important provision regarding nearly zero-energy buildings (NZEB). These are buildings that have a very low energy intake and are able to meet new energy needs using renewable energy sources. The EPBD requires all newly constructed buildings in the EU reach near zero-energy status by 31 December 2020. This request is carried over to 31 December 2018 if the building is occupied and owned by public authorities. Member States are also responsible for the system for the certification of the energy performance of buildings, which must contain information on the energy performance of the building and the reference values for that category of buildings. NZEB is not defined in enforced regulation in Bosnia and Herzegovina, and one of the activities of the GED 2nd phase project is drafting/updating regulation regarding definition of NZEB, in order to start advocating and communicating the required nearly zero-energy buildings approach in Bosnia and Herzegovina.  ***Renewable Energy Directive***  In April 2017, Bosnia and Herzegovina submitted its National Renewable Energy Action Plan (NREAP) to the Energy Community Secretariat. According to the NREAP - in the heating and cooling sector, the share of renewable energy sources is projected to increase from 805.8 ktoe in the base year to 1,085.2 ktoe in 2020. This share of energy from renewable sources will increase from 43.3% to 52.4%. The target in the heating and cooling sector for Bosnia and Herzegovina is based on the parameters from the entity action plans where these targets for 2020 are set. In order to achieve the set goals in the heating and cooling sector in Bosnia and Herzegovina by 2020, in addition to the use of biomass for domestic heating, it is necessary to use other forms of renewable energy sources that are not sufficiently used to reduce energy from fossil fuels. Therefore, based on the NREAP and the entity action plans, the goal of using solar energy is clearly marked, which is one of the activities under infrastructure works (PC4) of the GED 2nd phase. The project directly contributes to this goal by setting up public sector buildings with photovoltaic and solar thermal systems. |

**Project Component II (*Institutionalization of Energy Management*)**

The table below summarizes the project’s main achievements under the second component based on the indicators identified in the results framework.

Table 4: Project Achievements under Component II[[37]](#footnote-38)

|  |  |  |  |
| --- | --- | --- | --- |
| **Indicator** | **Baseline - GED I** | **Achievement GED II** | **Overall Achievement** |
| Number of public sector buildings monitored through EMIS database (target value: 7000 in total) | 4100 | 1700 | 5800 |
| Number of end-users trained on EMIS (out of which at least 40% women) (target value: 7000 in total) | 4100 | 842 | 4.942 |

The Law on Energy Efficiency in the Federation has created a legal obligation for all owners of public buildings to use an information system to monitor energy consumption and inform their EE investment decisions. The EMIS rulebook, adopted in the beginning of 2019 in the Federation of Bosnia and Herzegovina, set the EMIS database on a more sustainable footing (see a brief description of EMIS in the box below). The rulebook for Republika Srpska was prepared, but has not been adopted yet. Both rulebooks establish EMIS as a tool for energy consumption data monitoring. The number of public sector buildings with data entered into the EMIS system in the whole of Bosnia and Herzegovina reached 5,800 at the end of 2020.

Box 5: Energy Management Information System (EMIS)

|  |
| --- |
| EMIS is an internet application which represents a database of public sector buildings and public lighting systems and their energy consumption. The buildings that are recorded in the system are contacted and information is collected for a period of 2-3 years. After that, representatives of the institutions are trained on EMIS, and thereafter are obliged to provide consumption data on regular basis. Only buildings with data entered regularly can be selected for energy audits and/or infrastructure works. The total number of public sector buildings monitored through the EMIS database was about 5,800 at the end of 2020 (based on GED team data). |

Another contribution of the GED project has been the organization of trainings on the operation of the EMIS system. The trainees graduating from this programme are categorized as energy managers. This training has been an ongoing effort from the inception of the EMIS system. The number of GED trainees on the EMIS was close to the 5,000 mark at the end of 2020.

**Project Component III (*Legislative Framework - Financial Mechanisms*)**

The table below summarizes the project’s main achievements under the third component based on the indicators identified in the results framework.

Table 5: Project Achievements under Component III

|  |  |  |  |
| --- | --- | --- | --- |
| **Indicator** | **Baseline - GED I** | **Achievement GED II** | **Overall Achievement** |
| Number of EE/RES infrastructure projects implemented with non-grant (ESCO, performance-based granting and loans) co-financing modality (target value: 18) | 0 | 0 | 0 |

This component has experienced the most serious challenges during the implementation stage. The project’s objective of promoting at least 18 non-grant (loan-based) infrastructure investments in public buildings has not been achieved. No loan-based investments from the environmental funds have materialized in the period in question.[[38]](#footnote-39) The main reason for this has been the lack of interest in non-grant investments by the various government entities involved in infrastructure investments. There is still a strongly entrenched mentality of grant-based investments, coupled with the insecurity of the cost-effectiveness of the investments. The concept of the “revolving fund” that has been promoted by the GED project and UNDP since 2016 has not taken root yet in the country, despite many efforts and attempts at shifting mentality and creating the right policy and financial incentives for a more market-based approach to EE investments.[[39]](#footnote-40) In 2018, the Federation’s Environmental Fund launched two public calls for EE infrastructure initiatives – one based on grants and the other based on the “revolving fund” (non-grant).[[40]](#footnote-41) The non-grant call received limited interest. In 2019, the environmental fund decided to freeze the “revolving fund”.

After the challenges with the “revolving fund” approach, the GED team and the environmental funds decided to proceed in 2019 with another approach – the “*ESCO funding window*” for energy efficiency and renewable energy investments in public sector buildings, public lightning as well as small and medium enterprises. The ESCO financing model is under development, with the other UNDP project (Urban LED) assisting with the creation of procedures and criteria for the functioning of the financial mechanism under the environmental funds to support energy efficiency retrofits of public buildings and public lighting systems, as well as water saving measures according to National Energy Efficiency Action Plan priorities.[[41]](#footnote-42) GED and the environmental funds are also planning to establish an ESCO-related module in EMIS. The GED project has facilitated contacts with UNDP Serbia and the Agency for Transactions and Mediation of Real Estate (APN) from Croatia, who are also implementing EMIS in the respective countries, to agree on cooperation in the development of this module.

**Project Component IV (*Infrastructure Measures*)**

The table below summarizes the project’s main achievements under the fourth component based on the indicators identified in the results framework.

Table 6: Project Achievements under Component IV[[42]](#footnote-43)

|  |  |  |  |
| --- | --- | --- | --- |
| **Indicator** | **Baseline - GED I** | **Achievement GED II** | **Overall Achievement** |
| Number of implemented EE/RES infrastructure projects in public sector buildings (target value: 54) | 100 | 100 | 229[[43]](#footnote-44) |
| % of total energy consumption savings within implemented public sector buildings (target: more than 65%) | 0% | 59% | 59% |
| Achieved energy class of public sector buildings after EE/RES infrastructure measures (target: energy class “A” less than 55 kWh/m2) | 220 kWh/m2 | 78 kWh/m2 | 78 kWh/m2 |
| % of total energy cost savings (target value: 50%) | 0% | 52% | 52% |
| Amount of direct CO2 emission reduction (target value: 3,900) | 0 | 5,077 | 5,077 |
| Number of generated man-months “green jobs” (target value: 425) | 0 | 971 | 971 |
| Number of women as direct beneficiaries of EE/RES project benefits (target value: 10,800) | 0 | 270,176 | 270,176 |
| Number of buildings owned by state government institutions with installed equipment for energy monitoring | 0 | 26 | 26 |

GED II has supported three types of EE/RES infrastructure initiatives:

1. EE improvements in public sector buildings included measures such as the installation of new thermal insulation of facades and roofs, replacement of carpentry, switching heating systems from oil to biomass, etc.
2. Installation of solar hot water systems and photovoltaic systems;
3. EE improvements in public lighting systems.

Throughout the second phase of the project, a total of 110 infrastructural initiatives were implemented, as shown in Table 7 below. They were broken down as follows:

* Infrastructure works were performed on 100 public buildings, including civil, mechanical and electrical works and installation of solar systems in 10 buildings.
* Public lighting systems have been modernized with new, more energy-efficient LED lights in 10 local communities.

Table 7: Infrastructure Initiatives Undertaken by the GED II Project

| **Type of the Project Initiative (EE, Building, Lighting, Renewables, etc.)** | **Jurisdiction (Entity/Canton/Municipality)** | **Total Budget** | **Financed by the Project** | **Co-financing** | **Parallel financing** |
| --- | --- | --- | --- | --- | --- |
| Public lighting system | City of Bihać | 215,171 | 92,879 | 122,291 |  |
| Public buildings | Municipality Gorazde | 166,449 | 22,632 | 143,816 |  |
| Public buildings | Sarajevo Canton | 1,009,571 | 235,294 | 774,276 |  |
| Public building | City of Sarajevo | 235,294 | 58,824 | 176,471 |  |
| Renewable energy in public building | Municipality of Nevesinje | 130,090 | 114,353 | 15,737 | 117,647 |
| Public building | Municipality Orasje | 42,853 | 32,853 | 10,000 |  |
| Public building | Municipality Sokolac | 212,235 | 55,882 | 156,353 |  |
| Public lighting system | Municipalities Siroki Brijeg i Ljubuski | 482,972 | 235,294 | 247,678 |  |
| Public building and Public lightning system | City of Banja Luka | 476,324 | 173,529 | 302,794 |  |
| Public lighting system | Municipality of Donji Vakuf | 57,353 | 27,941 | 29,412 |  |
| Renewable energy in public building | Municipality of Trebinje | 223,882 | 188,588 | 35,294 |  |
| Public buildings | Herzegovina-Neretva Canton | 594,415 | 88,235 | 506,180 |  |
| Public buildings | Sarajevo Canton | 1,459,294 | 160,294 | 1,299,000 |  |
| Public buildings | Sarajevo Canton | 3,574,964 | 1,055,882 | 2,519,082 |  |
| Study and Action Plan for implementation of EE measures | Sarajevo Canton | 123,529 | 5,882 | 117,647 |  |
| Public building | Municipality of Lopare | 47,721 | 15,368 | 32,353 |  |
| Public building | Municipality of Teslic | 69,412 | 22,353 | 47,059 |  |
| Public building | Municipality ofnBanja Luka | 11,563 | 11,563 |  | 25,138 |
| Public building | Tuzla Canton | 18,472 | 18,472 |  | 104,626 |
| Public building and public lighting system | City of Banja Luka | 526,517 | 208,243 | 318,274 |  |
| Renewable energy in public building | Bijeljina | 114,706 | 55,882 | 58,824 |  |
| Renewable energy in public building | Municipality of Mrkonjic Grad | 48,298 | 23,529 | 24,768 |  |
| Public building | Sarajevo Canton and Municipality Center | 1,235,294 | 58,824 | 1,176,471 |  |
| Public buildings | Sarajevo Canton | 1,331,176 | 370,588 | 960,588 |  |
| Strategic document - decarbonization | Sarajevo Canton | 241,494 | 117,647 | 123,847 |  |
| Residentioal sector - EE and Renewables | Sarajevo Canton | 323,529 |  | 323,529 |  |
| Public buildings | Zenica-Doboj Canton | 154,902 | 19,608 | 135,294 |  |
| Public lighting system | City of Livno | 241,486 | 117,647 | 123,839 |  |
| Public buildings | Municipality Mrkonjic Grad | 173,529 | 55,882 | 117,647 |  |
| Public lighting system | Municipality of Prnjavor | 241,486 | 117,647 | 123,839 |  |
| Renewable energy | Municipality Mrkonjic Grad | 18,415 | 8,824 | 9,591 |  |
| Public lighting system | City of Tuzla | 205,882 | 88,235 | 117,647 |  |
| Public lighting system | Sarajevo | 35,294 |  | 35,294 |  |
| Public lighting system | Sarajevo | 111,765 | 111,765 |  | 117,647 |
| Public buildings | Una Sana Canton | 285,759 | 105,882 | 179,876 |  |
| Renewable energy | City of Bihać | 126,176 | 61,471 | 64,706 |  |
| Renewable energy in public buildings | Municipalities Ljubuški, Grude, Široki brijeg | 1,050,619 | 391,176 | 659,443 |  |
| Renewable energy in public buildings | Municipality of Fojnica | 26,425 | 11,984 | 14,441 |  |
| Public buildings | Sarajevo Canton | 135,294 | 135,294 |  | 135,294 |
| Public buildings | Municipalities Stanari, Doboj and Modriča | 176,471 | 176,471 |  | 496,183 |
|  |  | **15,956,083** | **4,852,720** | **11,103,363** | **996,536** |

The figure below shows the types of buildings retrofitted under the GED II project. The total amount of money invested in infrastructure initiatives has been about US$ 27 m, a considerable amount for the sector. Of this, about US$ 8 m came from the project budget and about US$ 19 m from co-financing by the various participating governments. There has also been parallel financing by other project and organizations in the amount of about US$ 1.7 m.

Figure 12: Types of Infrastructure Initiatives undertaken under GED II



GED II also supported the installation of energy monitoring equipment in 26 buildings owned by state government institutions.[[44]](#footnote-45) They have consisted of, but not limited to: (i) a server that would collect data; (ii) heat and electricity meters; (iii) PLC controllers connected to installed heat and electricity meters; (iv) system for collecting data from PLC controllers; and, (v) laptops that will ensure an effective system for energy consumption monitoring (40 pcs). To ensure adequate data collection and monitoring of energy consumption, the equipment is expected to be connected to EMIS.

Taking into account previously implemented initiatives, as well as price and energy data and baseline, the project has estimated a saving rate of about 60% in the energy consumption of renovated buildings. The average consumption of the buildings that underwent energy efficiency improvements is 78 kWh/m2. As most buildings use fossil fuels as a heating energy source, there have been significant reductions in CO2 emissions. Most of the emissions estimations are based on previous savings calculations. Total cumulative CO2 emissions reductions for the three years in question are estimated at 5,077 t. The number of direct beneficiaries of EE/RES initiatives under GED II is estimated by the project to have been 452,084, out of whom 270,176 women.

**Project Component V (*Public Awareness*)**

The table below summarizes the project’s main achievements under the fifth component based on the indicators identified in the results framework.

Table 8: Project Achievements under Component V

|  |  |  |  |
| --- | --- | --- | --- |
| **Indicator** | **Baseline - GED I** | **Achievement GED II** | **Overall Achievement** |
| Media campaign outreach (out of which at least 40% women) (target value: 100,000) | 0 | 2,307,070 | 2,307,070 |
| Number of awareness raising events held in BiH (target value: 45) | 0 | 47 | 47 |
| Number of promotional materials distributed (target value: 50,000) | 0 | 49.767 | 49.767 |

GED II engaged a marketing agency to carry out the outreach activities (Annex VI of this report provides the complete list of awareness-raising events organized by the project). Activities included events (trainings, workshops, conferences, presentations, official ceremonies, study trips, open air events, contests, etc.), promotional and educational materials (factsheets, leaflets, infographics, brochures, guides, professional publications, cartoons, human development stories, newsletters, bulletins, banners, calendars, etc.), media relations (press conferences, press kit, TV reportages, media advisories, press releases, workshops, media appearances), marketing (media-buying, print and online ads, video spots, paid search), and digital marketing (social networks, web banners, web platforms, bloggers and influencers, etc.).

GED II engaged a full-service marketing agency specialized in digital marketing, which developed the content (video, gif, visuals, etc.) distributed through social media channels and UNDP digital media accounts on Facebook, Instagram and Twitter. The project used prominent individuals to promote the benefits of energy efficiency improvements. Their stories were shared via digital platforms, media appearances and/or thematic articles. The project supported the creation of video stories and photo essays to showcase EE in public buildings and public lighting systems on the basis of completed infrastructure initiatives (see the box below for more details). The stories profiled the benefits of investing in energy efficiency. In addition to reductions in energy consumption and energy costs, the outreach campaign emphasized key dimensions of EE that usually get underestimated – i.e. more comfortable living and working conditions, warmer premises, happier users, healthier lifestyles, safer use of the streets, etc.

Box 6: Video Stories and Photo Essays Supported by the Project

|  |
| --- |
| * Video Story 1 - Energy efficient Primary School “Čelebići” in Konjic - delivered and published 17.10.2019. on [GED.ba](https://eur03.safelinks.protection.outlook.com/?url=http%3A%2F%2Fged.ba%2F&data=02%7C01%7Camila.satara%40undp.org%7Cbc548fc6f77c4ee3791f08d81ce2ade3%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C637291107187513885&sdata=e7tLohxXuSU8F%2FKEg2OD5NjIqizrmFb2weUZGIRhBl8%3D&reserved=0)**,** [http://ged.ba/video-galerije/video-galerija/](https://eur03.safelinks.protection.outlook.com/?url=http%3A%2F%2Fged.ba%2Fvideo-galerije%2Fvideo-galerija%2F&data=02%7C01%7Camila.satara%40undp.org%7Cbc548fc6f77c4ee3791f08d81ce2ade3%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C637291107187513885&sdata=i9%2Fn%2BBr8pEltuFuslzRx%2BAbfrcO6nDmvqhDmG4rmDWw%3D&reserved=0) * Video Story 2 - Street lighting brought back a sense of security to the citizens of Bihać -delivered and published 29.11.2019. on [GED.BA](https://eur03.safelinks.protection.outlook.com/?url=http%3A%2F%2Fged.ba%2F&data=02%7C01%7Camila.satara%40undp.org%7Cbc548fc6f77c4ee3791f08d81ce2ade3%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C637291107187523841&sdata=Ji3tvmzYCJ5aMo2I86hPPx7fU9z34HeZPmqIYt0lYEE%3D&reserved=0), [http://ged.ba/video-galerije/video-galerija/](https://eur03.safelinks.protection.outlook.com/?url=http%3A%2F%2Fged.ba%2Fvideo-galerije%2Fvideo-galerija%2F&data=02%7C01%7Camila.satara%40undp.org%7Cbc548fc6f77c4ee3791f08d81ce2ade3%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C637291107187523841&sdata=Te%2BK9efy0ORL7G8yKO8lxcqsa6WXiset9MkpRDCKWmE%3D&reserved=0) * Photo Essay 1 - A warm winter for Bambi youngsters Banja Luka - delivered and published 12.12.2019. on [Exposure.co](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fexposure.co%2F&data=02%7C01%7Camila.satara%40undp.org%7Cbc548fc6f77c4ee3791f08d81ce2ade3%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C637291107187523841&sdata=3c%2BEpxwoUGChiEI8Q3XiIIwhaVIAQIhjUNoIh6lKvc0%3D&reserved=0), [https://ged.exposure.co/a-warm-winter-for-bambi-youngsters](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fged.exposure.co%2Fa-warm-winter-for-bambi-youngsters&data=02%7C01%7Camila.satara%40undp.org%7Cbc548fc6f77c4ee3791f08d81ce2ade3%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C637291107187533798&sdata=PXcCo3DTMmuqixOvjAszWQVyE9sPYqpih04bvgGiuKM%3D&reserved=0) * Photo Essay 2 - Three generations, A story made of experiences and memories Sokolac - delivered and published 25.12.2019. on [Exposure.co](https://eur03.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.exposure.co%2F&data=02%7C01%7Camila.satara%40undp.org%7Cbc548fc6f77c4ee3791f08d81ce2ade3%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C637291107187533798&sdata=7EMfIXDWRsoi7Lrt%2BGyIn2tpyaMhzzBA4reC9hqv0qU%3D&reserved=0), [https://ged.exposure.co/three-generations](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fged.exposure.co%2Fthree-generations&data=02%7C01%7Camila.satara%40undp.org%7Cbc548fc6f77c4ee3791f08d81ce2ade3%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C637291107187543754&sdata=dY4u%2Fezk1x1GsbZZwORTaKQ3oYBpZ0BJHx%2F5xGdVD38%3D&reserved=0) |

The project has organized a total of 47 awareness-raising events for the wider public. They included open air events aimed at promoting energy efficiency in residential buildings. Opening ceremonies were organized in the buildings renovated under the project. During these events, promotional materials were distributed, including brochures, flyers, leaflets, smart tips on energy use, etc. The project team used social media channels - both UNDP's official channels and GED's own (i.e. Facebook page "*Profesor Atom*" and IG profile "*Lajk za pamentu energiju*”. The project website was upgraded in 2019 and provides smart energy tips, educational materials and information about the project itself. The project team estimates the total number of people reached through the marketing campaign to have been about 2.3 m.[[45]](#footnote-46)

**Project Component VI (*RES Solutions for Off-grid Households*)**

The table below summarizes the project’s main achievements under the sixth component based on the indicators identified in the results framework.

Table 9: Project Achievements under Component VI

|  |  |  |  |
| --- | --- | --- | --- |
| **Indicator** | **Baseline - GED I** | **Achievement GED II** | **Overall Achievement** |
| Number of persons benefiting from RES solutions (target value: 50) | 0 | 71 | 71 |
| Number of females benefiting from RES solutions (target value: 30) | 0 | 32 | 32 |

The project installed hybrid photovoltaic and solar systems (electricity and thermal heat generation) in remote off-grid locations. Solar systems were installed in 16 households with a total of 71 users, of whom 32 women. The project also supported the Faculty of Mechanical Engineering[[46]](#footnote-47) with the purchase of advanced equipment for measuring air pollution.[[47]](#footnote-48)

Table 10: Analysis of Achievement of Project’s Results

|  | **Goals/Objectives** | **Indicators** | **Comments** | **Baseline** | **Overall Target** | **FY 18** | **FY 19** | **FY 20** | **Total (with baseline)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Overall Goal** | The overall objective is to create a favorable environment for investing in EE/RES infrastructure measures in BiH. | Number of infrastructure projects directly and indirectly benefiting from improved financing mechanisms in BiH for EE investments (target value: 154). | This indicator includes all EE/RES projects, including projects in public buildings and public lightning systems, implemented through grant co-financing between the project and local governments, or through any other non-grant financing mechanisms such as ESCO, performance-based grants and loans. | 100 | 154 | 10 | 59 | 41 | 239[[48]](#footnote-49) |
| **Outcome / Strategic objective** | SO1a: To develop capacity and strengthen skills of Environmental Fund staff | SO1a: Number of detailed energy audits assessed, prioritized, and ranked by Environmental Funds (target value: 120). | This measure includes all energy audits conducted not only through the GED project, but also other projects or arrangements (i.e. World Bank project, GCF project, etc.). These audits are used for the ranking and selection of infrastructure works. Detailed energy audits conducted through GED II exclusively are shown under indicator 1.1. | 140 | 260 | 289 | 418 | 507 | 507 |
| SO1b: To develop capacity and strengthen skills of energy professionals | SO1b: Number of energy stakeholders participating in training programmes for skills and knowledge development on EE and RES (NZEB) (target value: 600) | The trainings captured under this indicator related to the Revolving Fund established in the Federation in 2016. They included educational trainings with end-users and government entities. These trainings were discontinued in 2019 when the Revolving Fund was frozen in the Federation. This does not include trainings on EMIS, which are shown in Annex V in the report. | 500 | 1,100 | 749 | 0 | 0 | 749 |
| SO2: To establish energy monitoring and reporting mechanisms in BiH | SO2: Number of municipal authorities with reporting mechanisms in place (target value: 90). | The rulebook on energy efficiency information system in FBiH was adopted in January 2019, and all municipalities in FBiH had to establish monitoring systems. | 0 | 106 | 0 | 169 | 0 | 169 |
| SO3: To enable financing for EE/RES infrastructure projects in BiH | SO3: % of increase of financial resources allocated for EE measures through the Fund by the end of 2020 (target value: 40%). | This is the amount budgeted for investment on EE measures by the Federation Fund only. No data was available from the RS fund. The percentage is obtained through official reports and budget plans. The data shown here is cumulative. | 0% | 40% | 0% | 20% | 50% | 50% |
| SO4: To implement cost-optimal, green jobs generating and emission reducing EE/RES infrastructure projects in BiH | SO4: Number of effectively implemented EE/RES infrastructure projects (target value: 54). | This indicator includes all EE/RES projects, including the projects in public buildings and public lightning systems | 100 | 154 | 10 | 59 | 41 | 239[[49]](#footnote-50) |
| SO5: To increase general public’s understanding of EE/RES benefits | SO5: Number of people reached through marketing campaign (target value: 167,000) | This number is estimated based on reports provided by marketing agencies. | 0 | 167,000 | 50,000 | 757,592 | 1,499,478 | 2,307,070 |
| SO6: To provide access to energy for off grid households in BiH | SO6: Number of households provided with RES solution in off grid areas in BiH (target value: 24) | Each of 26 households were provided with their own RES solution for production of electricity. | 0 | 24 | 0 | 16 | 8 | 24 |
| **Output / Result** | Result 1: 260 detailed energy audits of public sector buildings drafted and assessed for EE/RES infrastructure investments | 1.1    Number of detailed energy audits conducted (target value: 120) | SO1 includes all conducted audits through the previous project phase, as well as other adequate audits conducted through other projects or arrangements. The indicator here represents the number of DEAs developed only through GED II. It is usually larger than the number of implemented infrastructure projects, but in some cases if selected buildings already had a DEA, the infrastructure project did not require an additional one. | 140 | 260 | 59 | 50 | 87 | 336 |
| 1.2    Number of investment decisions made based on evaluation of detailed energy audits (target value: up to 15 annually) | This is measured by the project team in the same way as the first indicator, as well as indicator SO4. The baseline and target presented here are not clear. | 65 | 85 | 10 | 59 | 41 | 175 |
| 1.3    Number of Fund staff participating on annual capacity development training on energy efficiency, EMIS and EE/RES policy (target value: 12) | The trainings were organized by GED with the purpose of improving the knowledge and strengthening the capacities of both Funds in the area of EE/RES and Energy Management. | 10 | 12 | 8 | 8 | 8 | 18 |
| 1.4    Number of Fund staff actively working on EMIS investment decision making process cycle, monitoring, assessing and evaluating energy indicators (target value: 6) | The number of staff in the funds increased from 4 to 12. Fund employees working in the EE sector monitor, asses and evaluate energy indicators, and prepare the priority lists of EE projects. | 4 | 6 | 8 | 8 | 8 | 12 |
| 1.5    Number of stakeholders participated on training programme for energy management, skills, and knowledge development and NZEB (target value: at least 200 annually) | This indicator is the same as SO1b listed above. | 500 | 1,100 | 249 | 0 | 219 | 968 |
| 1.6    Number of female energy professionals participated on training programme for skills and knowledge development and NZEB (target value: at least 40 annually) |  | 90 | 120 | 95 | 0 | 101 | 286 |
| 1.7    Number of Energy intensity mapping applications developed (target value:1) |  | 0 | 1 | 0 | 1 | 1 | 1 |
| 1.8    Measurement and verification (M&V) module within EMIS enabled | This activity is in progress. |  | Yes | No | No | In Progress | In Progress |
| 1.9    Nearly Zero-Energy Public Buildings integrated into EE/RES by-laws in BiH | This activity is in progress. |  | Yes | No | No | In Progress | In Progress |
| 1.10 Number of cost-optimal analysis for public buildings developed (RS, FBiH, BiH) (target value:3) |  | 0 | 3 | 0 | 3 | 3 | 3 |
| 1.11. Number of persons employed for energy management |  |  | 3 | 0 | 3 | 3 | 3 |
| 1.12. Number of energy managers – coordinators and energy managers trained for energy management | A specific training programme was organized for energy managers – coordinators and energy managers at the state level. |  | 80 | 0 | 0 | 107 | 107 |
| 1.13. Update of the study on the state level of energy efficiency for buildings owned or used by state government institutions | This activity is in progress. |  | 1 | 0 | 0 | In Progress | In Progress |
| 1.14. Energy efficiency operational plan for buildings owned or used by state government institutions | This activity is in progress. |  | 1 | 0 | 0 | In Progress | In Progress |
| Result 2: EMIS is implemented and continuously updated in BiH municipalities | 2.1    Number of public sector buildings monitored through EMIS database (target value: 7000) |  | 4,100 | 7,000 | 5,270 | 5,554 | 5,800 | 5,800 |
| 2.2    Number of end-users trained on EMIS (out of which at least 40% women) (target value: 7000) | GED invited public institutions to nominate energy associates who underwent a training programme in order to learn how to use EMIS. | 4100 | 7,000 | 4,568 | 4,723 | 4,942 | 4,942 |
| Result 3: Financial mechanisms and modalities for EE/RES investments within Environmental Funds are established and operational | 3.1    Number of EE/RES infrastructure projects implemented with non-grant (ESCO, performance-based granting and loans) co-financing modality (target value: 18) | This indicator saw no progress because of the freezing of the "Revolving Fund". | 2 | 20 | 0 | 0 | 0 | 2 |
| Result 4: In at least 54 EE/RES infrastructure measures have been implemented with EU required technical standards. | 4.1    Number of implemented EE/RES infrastructure projects in public sector buildings (target value: 18 annually) | The difference between this and SO4 is that in SO4 the indicator is for the number of effectively implemented EE/RES infrastructure projects, which include public buildings, public lightning systems, and here it is about projects in public buildings. | 100 | 154 | 10 | 53 | 37 | 229[[50]](#footnote-51) |
| 4.2    % of total energy consumption savings within implemented public sector buildings (target: more than 65%) | This was calculated based on energy consumption before and after implementation of EE measures. Estimation done using average for building after one heating season. | 0% | 65% | 51% | 54% | 59% | 59% |
| 4.3    Achieved energy class of public sector buildings after EE/RES infrastructure measures (target: energy class “A” less than 55 kWh/m2) | This is an average number. | E = 220 kWh/m2 | A = less than 55 kWh/m2 | B=63 kWh/m2 | 83 kWh/m2 | 78 kWh/m2 | 78 kWh/m2 |
| 4.4    % of total energy cost savings (target value: 50%) | This is different from 4.2. above due to the fact that if the building had fuel switch to more expensive fuel, energy consumption is reduced by a certain %, but the cost for energy would be reduced in lower % because the new fuel is more expensive. | 0% | 50% | 50% | 50% | 52% | 52% |
| 4.5    Amount of direct CO2 emission reduction (target value: 3,900) | Reduction of CO2 emissions from the buildings that went through energy retrofits. | 0 | 3,900 | 334 | 2,624 | 2,119 | 5,077 |
| 4.6    Number of generated man-months “green jobs” (target value: 425) | This was calculated based on the Study "Green Jobs - Analysing the Employment Impact of Energy Efficiency Measures in BiH" on 1 million BAM investment, 49 “green jobs” are created. | 0 | 425 | 61 | 518 | 392 | 971 |
| 4.7    Number of women as direct beneficiaries of EE/RES project benefits (target value: 10,800) |  | 0 | 10,800 | 2,463 | 207,958 | 59,755 | 270,176 |
| 4.8. Number of buildings owned by state government institutions with installed equipment for energy monitoring | Installation of energy consumption monitoring equipment. | 0 | 26 | 0 | 0 | 26 | 26 |
| Result 5: Public awareness on benefits of energy efficiency, renewable energy, NZEB, energy management and reduction of emissions to air is increased. | 5.1    Media campaign outreach (out of which at least 40% women) (target value: 100,000) | Same as SO5. | 0 | 250,000 | 50,000 | 757,592 | 1,499,478 | 2,307,070 |
| women |  | 0 | 10,000 | 25,000 | 384,857 | 794,723 | 1,204,580 |
| 5.2    Number of awareness raising events held in BiH (target value: 45) | Awareness-raising events for the wider public. | 0 | 45 | 15 | 17 | 15 | 47 |
| 5.3    Number of promotional materials distributed (target value: 50,000) | Promotional materials on EE for the wider public. | 0 | 50,000 | 10,000 | 18,399 | 21,368 | 49,767 |
| Result 6: At least 24 off-grid households in remote areas in BiH provided with thermal heat/electricity | 6.1    Number of persons benefiting from RES solutions (target value: 50) | Persons living in houses equipped with RES systems. |  | 50 | 0 | 52 | 19 | 71 |
| 6.2    Number of females benefiting from RES solutions (target value: 30) | Females living in the houses equipped with RES systems. |  | 30 | 0 | 23 | 9 | 32 |

### Impact

Due to its long duration, wide scope of activities and large geographical coverage encompassing all types of administrative units in all parts of Bosnia and Herzegovina, the project has had a significant footprint already and is expected to have further impact, especially given the fact that a third phase has already been approved.

While this evaluation does not represent an impact assessment based on a systematic study of the changes that the project has effected in the livelihoods of the people targeted by its activities, it is possible to provide a summary of the main benefits it has generated based on the data collected through the project’s logical framework (presented in Table 10). The following are the main aspects of the project’s impact.

Table 11: Project’s Key Results

|  |  |
| --- | --- |
| **Key Indicators** | **Result** |
| Number of energy efficiency infrastructure initiatives (projects) implemented through the grant co-financing modality | 110 |
| Total amount invested in infrastructure initiatives (US$) | 15,956,083 |
| Number of public buildings with implemented infrastructure measures | 100 |
| Number of direct beneficiaries of EE/RES initiatives | 606,803 |
| Number of direct women beneficiaries of EE/RES initiatives | 270,176 |
| Number of households provided with RES solutions in off-grid areas | 24 |
| Number of generated man-months “green jobs" (also for women separately) | 971 |
| Number of detailed energy audits conducted | 196 |
| Total energy consumption savings generated by initiatives in public sector buildings | 59% |
| Total amount of direct CO2 emission reductions | 5,077 |
| Number of cost-optimal analyses conducted for public buildings | 3 |
| Number of awareness-raising events | 47 |
| Number of promotional materials distributed | 49,767 |
| Number of people reached through marketing campaign | 2,307,070 |

As can be seen from the table, the benefits generated by the project have been diverse and large in scale. At a very tangible level, more than 600,000 people have benefited directly from energy efficiency improvements throughout the country. Also, the impact at the level of awareness and education has been significant due to the large-scale campaigns undertaken by the project and estimated by the project team to have reached about 2.3 million people (primarily through social media).

### Efficiency

This section provides an assessment of the project’s efficiency by focusing on a number of parameters closely associated with efficient project management. These parameters are categorized into the following categories: i) co-financing; ii) budget execution rates; and, iii) timeliness of the implementation process.

Co-financing

As has been already noted, a notable feature of the GED project is the amount of co-financing it has generated in both its first and second phase. Such leveraging of resources from all levels of government is not only an indicator of trust, but also a factor of efficiency because when resources in a very specific sector such as energy efficiency in public buildings get pooled together from both government and non-government sources in such a large scale the scope for economies of scale is significant. As has been noted already in this report, out of about US$ 16 m invested in infrastructure initiatives under GED II - a considerable amount for the buildings sector – only about US$ 4.9 m came from the project budget, with the rest (about US$ 11.1 m) raised as co-financing from all sorts of governments. In addition, GED II was able to expand the scope of synergies with other activities by generating parallel financing from other projects and organizations (such as the World Bank) in the amount of about US$ 1 m. These activities required close coordination with the respective partners because the renovation of the same building required a clear division of labour and financial contributions.

Budget Execution Rates

Another indicator of efficiencies is budget execution. In general, low execution rates indicate delays, poor planning or the presence of large internal or external challenges that impeded an efficient proceeding of project activities.

Table 11 below shows the project’s budget execution by outcome (component) and for each year. As can be seen from the table, GED II started with lower execution rates in 2018 – particularly due to no expenditures in that year in components IV and VI. In 2019, budget execution improved considerably with the execution rate jumping from 19% to 70%. In this year, execution for component VI was above 100%, addressing the backlog from 2018, whereas execution for component IV was 65%. In 2020, the project went into a full speed mode, with an overall execution rate of 155% for the whole project. All components were executed by more than 100% (with the exception of component v), addressing the expenditure backlog especially in the lagging components IV and VI. At the point of this evaluation, the overall execution project for GED II was at 85%, with a total of US$ 5.5 m spent by the project.

Table 12: Budget Execution Rates

| **No.** | **Outcome Area** | **Budgeted (as per Pro Doc)** | **Spent** | **Execution Rate** |
| --- | --- | --- | --- | --- |
| **Year 2018** | | | | |
| **1** | Outcome 1 | 328,554 | 185,200 | 56% |
| **2** | Outcome 2 | 0 | 0 | 0 |
| **3** | Outcome 3 | 0 | 0 | 0 |
| **4** | Outcome 4 | 995,243 | 0 | 0% |
| **5** | Outcome 5 | 83,632 | 70,039 | 84% |
| **6** | Outcome 6 | 71,685 | 0 | 0% |
| **7** | Project Management & M&E | 54,719 | 36,140 | 66% |
| **8** | **Total** | 1,533,833 | 291,379 | 19% |
| **Year 2019** | | | | |
| **1** | Outcome 1 | 411,330 | 327,121 | 80% |
| **2** | Outcome 2 | 0 | 0 | 0 |
| **3** | Outcome 3 | 0 | 0 | 0 |
| **4** | Outcome 4 | 2,187,448 | 1,426,802 | 65% |
| **5** | Outcome 5 | 81,243 | 59,264 | 73% |
| **6** | Outcome 6 | 71,685 | 101,642 | 142% |
| **7** | Project Management & M&E | 98,865 | 79,490 | 80% |
| **8** | **Total** | 2,850,571 | 1,994,319 | 70% |
| **Year 2020** | | | | |
| **1** | Outcome 1 | 406,963 | 588,907 | 145% |
| **2** | Outcome 2 | 0 | 0 | 0 |
| **3** | Outcome 3 | 0 | 0 | 0 |
| **4** | Outcome 4 | 1,380,191 | 2,311,505 | 167% |
| **5** | Outcome 5 | 77,658 | 66,106 | 85% |
| **6** | Outcome 6 | 71,685 | 77,458 | 108% |
| **7** | Project Management & M&E | 140,051 | 174,620 | 125% |
| **8** | **Total** | 2,076,548 | 3,218,596 | 155% |
| **ALL YEARS** | | | | |
| **1** | Outcome 1 | 1,146,848 | 1,101,228 | 96% |
| **2** | Outcome 2 | 0 | 0 | 0 |
| **3** | Outcome 3 | 0 | 0 | 0 |
| **4** | Outcome 4 | 4,562,881 | 3,738,307 | 82% |
| **5** | Outcome 5 | 242,533 | 195,408 | 81% |
| **6** | Outcome 6 | 215,054 | 179,100 | 83% |
| **7** | Project Management & M&E | 293,636 | 290,250 | 99% |
| **4** | **Total** | 6,460,952 | 5,504,293 | 85% |

Table 12 below summarizes the project’s execution rates for each year and each component. It clearly shows the progressing execution rates with the passing of each year. It also shows that the outcomes that have had almost full execution by the time of this evaluation are components I and Project Management. The other components have had an execution rate of about 80%.

Table 13: Budget Execution Rates by Year

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Outcome Areas** | **2018** | **2019** | **2020** | **All Years** |
| Outcome 1 | 56% | 80% | 145% | 96% |
| Outcome 2 | 0% | 0% | 0% | 0% |
| Outcome 3 | 0% | 0% | 0% | 0% |
| Outcome 4 | 0% | 65% | 167% | 82% |
| Outcome 5 | 84% | 73% | 85% | 81% |
| Outcome 6 | 0% | 142% | 108% | 83% |
| Project Management & M&E | 66% | 80% | 125% | 99% |
| **Total** | 19% | 70% | 155% | 85% |

Timeliness of Implementation Process

Overall, the project has had an efficient implementation process. Considering that the project has executed 110 infrastructure initiatives that come with their tendering process, negotiation with contractors, monitoring, reporting, and so on, the fact that all of this was achieved in three years is impressive. Renovation works often get bogged down in procedural and administrative delays that require extensions. The fact that GED I laid good foundations for this process and the trust that has been built between participating governments and UNDP/project team is a key factor that has enabled the project to maintain an accelerated pace.

As has been noted already, an area where major delays (or even suspension) happened is the loan financing part. Here no progress was possible because of the lack of interest from the beneficiaries for non-grant financing. This might have been compounded by the decision of the environmental fund to launch both a grant-based and non-grant-based process in parallel which seems to have blunted the interest of participating entities for the non-grant component. Other delays happened in certain activity areas highlighted previously in this report – in particular, in the component on the measurement and verification (M&V) module within EMIS or with regards to the number of public sector buildings entered into EMIS. Some of these delays were outside the influence of the project and the team has been working to find ways to completing them by the end of 2021.

Overall, the project was able to spend 85% of the resources until the point of this evaluation. Most activities have been completed, with the exception of the outstanding ones already outlined in the effectiveness section. With regards to procedures and processes, the project team has been able to complete a very significant number of complex infrastructure initiatives in record times. Local partners and end-users interviewed for this evaluation were pleased with the efficiency and speed of project activities. Given some of the outstanding activities, the project team has already requested a no-cost extension until the end of 2021, which will allow the project team to complete all planned activities with the exception of the non-grant (loan) activity.

### Sustainability

The fact that GED III – the project’s third phase – has been approved in principle and builds on the foundations of the previous phases is a significant indicator of strong sustainability. As has already been noted in this report, the GED project is not a piecemeal, standalone intervention with limited scope in time and space. On the contrary, it is a long-standing partnership with key national partners at all levels and the Government of Sweden determinedly focused on transforming the energy efficiency field in the country. As such, the GED project is one of the most sustainable interventions of UNDP in the country and in the world. This project represents a good example of how UNDP project should be – creating depth over time through strengthened trust and alliances with all relevant stakeholders. UNDP has really become an agent of lasting change in the area of energy efficiency in the country.

In the rest of this section, it is worth focusing on three components/determinants of sustainability that are crucial for the GED project:

* Demonstration of Effects
* Institutional Infrastructure
* Financing
* Social Norms/Mentality

***Demonstration of Effects*** - A key aspect of the GED project is the demonstration of the feasibility and importance of energy efficiency improvements in public buildings. Through hundreds of interventions throughout the country and at all levels of government, the project has demonstrated that doing EE renovations in public buildings in not only possible but also desirable both for reasons of comfort and financially. The project’s recent focus on pointing out the comfort aspects of EE renovations is very important because where the financial feasibility is in question, people undertake EE investments on other grounds. Also, the amount of information that is available now on public buildings through energy audits and the EMIS system is a great incentive for undertaking investments. What the weakness in this whole process is at this point is that through this large number of infrastructure projects undertaken on the basis of grants and co-financing, stakeholders in Bosnia and Herzegovina have become used to the grant modality. This has hampered the emergence of a more sustainable and market-based system of financing EE investments in the public sector (or even residential sector in the future). The step GED III will be taking into the SME sector is a step in the right direction as it will start engaging the private sector where there is no significant untapped potential for savings and efficiencies. Also, the fact that GED III will continue to further promote the results of GED I and II, raise awareness and disseminate knowledge on the benefits of EE/RES at different levels of government, is important.

***Institutional Infrastructure*** - Another key factor of sustainability for the results of the GED project is the effects it has had at the institutional and policy level. Changes grounded in policy and the institutional set up are more likely to be maintained because they create routines and obligations that the respective authorities are obliged to follow through. A perfect example of such institutional structures that promote EE on a sustainable basis are the environmental funds in both entities which were created with UNDP support. These two institutions have received continuous support by the GED project and have become important promoters of EE in the country. Also, the support provided to MoFTER in the area of EE has been crucial for the state level. GED II enabled the creation of three dedicated positions at the state level - one *energy manager-coordinator* and one *energy manager* in MoFTER and one *energy manager* in the Service for Common Affairs (Service). Although initially paid for by the project, after the completion of the project these positions will become part of the regular employees of MoFTER and the Service. Also, the considerable body of legislation and policy that has been developed by the GED project – i.e. primary and secondary legislation, rule books, transposition of EU legislation, etc. - grounds EE activities on firm foundations.

***Social Norms/Mentality*** - EE is as much about behavioural change, as it is about policy and financial incentives. Research has shown that even when the incentives are in place and investments are cost-effective, people do not undertake EE improvements for a variety of psychological factors. The importance of behavioural factors for the sustainability of the results in this area cannot be emphasized enough. Therefore, it is encouraging that the project has taken many steps in this direction by building a large awareness campaign and producing a lot of publicity material around the EE topic. This work should be maintained and further developed in the third phase of the project. The project should focus more strategically on social norms as a crucial determinant of perceptions about EE. Interventions should be more focused on what actually works in practice and should be guided by the norms that prevail in the communities. This requires a more analytical and data-driven approach to awareness-raising and publicity activities, which so far seem to have been more generic in nature.

***Financing*** - Grants are an important incentive for stimulating EE investments in public buildings, but they are not sufficiently sustainable, especially when there are cost-effective investment opportunities that could be undertaken on a market basis. As has been noted already, the GED project has had a real impact in making the benefits of EE/RES recognized within the various governments in Bosnia and Herzegovina, which is evident from the increasing levels of co-financing that these governments have contributed. But a market mechanism for the financing of these projects is still not in place in the country. The introduction of market-based mechanisms for the financing of EE is extremely challenging and has eluded many countries. In addition to the fact that often EE improvements may not be cost-effective or have a low investment return that materializes after a long period, there are a number of psychological factors that impede people from making the most rational decision. However, the easy availability of funding for projects that are cost-effective is an important factor. Outside of the public buildings sector, financing will have to be more closely linked to the market. Initial steps have already been taken in this direction, as UNDP through its other project (GCF-funded) and the World Bank through its BEEPS project have facilitated the loan-based retrofitting of 30 public buildings. Also, the GED project’s attempts to shift over time the financing mechanism towards the revolving fund and now towards the ESCO approach are commendable. However, they will need to be pursued more dynamically and systematically, resulting in a well-established and accepted financing mechanism. This evaluation does not provide a prescription on how that financing mechanism should look like as that should be a decision grounded in the specifics of the context and made on the basis of the careful analysis of what is politically, administratively and financially feasible at this point in time in Bosnia and Herzegovina. But the overall thrust of the process should be on creating a model that is more market-based and that could ideally also involve the commercial banking sector.

***Reinvestment of Savings*** - While governments/end-users may reinvest savings generated from EE improvements into other EE/RES projects (or other infrastructure projects), based on Energy Efficiency Action Plans (EEAP), interviews with stakeholders showed that this does not happen smoothly in practice. The challenge is that saved funds do not go back to the same source of the institution where the initial investment came from, but go to another institution’s budget within the same canton or municipality. So, while the funds remain within the respective municipality or canton, they do not reward the institution which originally provided the funds. The Revolving Fund is effectively a mechanism that would effectively address this mismatch. This is something that the project could focus in the third phase with a view to improving the ability of end-users to retain those savings and reinvest them in EE/RES projects. The revolving fund idea was an instrument that was meant to achieve this, but there are other ways that can be explored to incentivize more autonomy in decision-making regarding energy efficiency investments through retained savings in the entity where the actual savings occurred (rather than at the level of ministry or municipality).

Overall, sustainability is a key dimension of this project that will require further attention going forward. The fact that the project’s phase III has been approved is a significant factor for sustainability, as many of the achievements that have been made so far will be further consolidated. As has been noted above, the focus should be on further establishing the conditions for market-based solutions to energy efficiency and a more fundamental shift at the psychological level of the community in general.

### Coherence

This section assesses the extent to which the project’s interaction with other complementary projects by UNDP and other development partners has been effective and conducive to synergies that maximize development results.

UNDP has a number of key ongoing projects that relate directly to the area of energy efficiency in Bosnia and Herzegovina. As has been mentioned in the relevance section of this report, EE is an area where the UNDP CO has built a significant comparative advantage, even compared to development banks that come with much larger financial envelopes.

UNDP’s projects in the area of EE work well together – they not only coordinate their initiatives closely, but also implement activities jointly. As has been noted already, other UNDP projects have used the platform provided by the GED project. For example, UNDP’s Urban LED project[[51]](#footnote-52) has been supporting the Federation Environmental Fund in the development of an ESCO financing mechanism (which, as has been mentioned, can be considered as a replacement of the Revolving Fund). GED has been involved in the ESCO initiative and has been cooperating with the Urban LED project through a specific activity in support of the development of the “ESCO measurement and verification” module within EMIS, which will enable the measurement and availability of information for ESCO projects. GED II has also cooperated with UNDP’s *Scaling-up Investment in Low-Carbon Public Buildings* project funded by the Global Climate Fund (GCF), which has enabled the scaling-up of results in EE retrofits of public buildings, mutually relying on a variety of decentralized delivery mechanisms and creating win-win situation for all parties. In fact, the GED project has many similarities with the GCF project given that the focus of both is the public buildings sector. The two projects have developed jointly the “investment framework” for energy efficiency in public buildings. They have also contributed resources jointly to the renovation of the same building. The Swedish Government is funding another project implemented by UNDP in the area of energy efficiency in residential buildings. This was established as a separate project not to stretch the scope of the GED project into an altogether huge sector such as the residential one. However, the two projects are expected to cooperate very closely in the coming years.

The establishment of close cooperation between UNDP projects has been facilitated by the presence of a strong and experienced E&E Team at the CO level (this has been outlined in the outcome evaluation of the CO’s E&E portfolio conducted in 2018). It would have certainly been more desirable to have had stronger integration between these projects under one team structure, given their similarities, but at the same time it is also understandable that the projected nature of UNDP’s delivery is largely dependent on its funding model – and reliance on various donors which impose their own procedures and rules. So, as far as the CO and the GED team are concerned, the cooperation between the three most relevant UNDP projects in this area has been strong.

GED II has also cooperated with the World Bank’s *Bosnia and Herzegovina Energy Efficiency Project* (BEEP) project. BEEP provides loans to entities that own public buildings for EE improvements. The project is similar in certain dimensions to the GED project, but uses different selection criteria and therefore targets different buildings. However, there have been a number of cases when both projects (or three – including the GFC project) have pooled resources to finance EE improvements in the same building. GED II effectively coordinated parallel financing with BEEPS for a number of infrastructure initiatives. The process involved a clear division of labour and financial contributions on the renovation of the same building. Such cooperation is welcome and could be intensified further. GED II has also cooperated with the German Agency for International Cooperation (GIZ), as well as the Federation’s Environmental Protection Fund and the Ministry of Energy, Mining and Industry on the development of the Rulebook on Information System of Energy Efficiency (ISEE).[[52]](#footnote-53) Cooperation with the EBRD which has an EE programme in the country has been less intensive – mainly because EBRD’s loan programme for EE in public buildings is at the inception phase.[[53]](#footnote-54) Also, coordination with Germany’s KfW should be strengthened, especially in light of their upcoming project on energy efficiency in public buildings.[[54]](#footnote-55)

Overall, the upcoming GED III will have an opportunity to contribute to the development of a much stronger coordination platform in the EE sector in the country. To a large extent, coordination is challenging as a result of the very fragmented nature of energy efficiency policy and practice in the country, with different institutions operating in isolation in this area. For example, the Ministry of Spatial Planning in the Federation and KfW have been working on the establishment of a Revolving Fund, outside the realm of the environmental fund, at a time when the revolving fund in the latter was suspended. Certainly, better government-led coordination is needed in this area. Perhaps the UNDP CO, at the level of the E&E Team, could use its clout an provide greater support in this area. This has happened to some extent, but primarily within the donor community. For example, UNDP, GIZ and USAID have established closer cooperation in the field of energy efficiency and coordination of their activities related to the transposition of the EED with the goal of a common approach. But donor coordination does not make up for effective government inter-agency coordination which is crucial for the sector.

### Gender Equality and Empowerment of Women

The GED project has paid increasing attention to the gender dimension. In marked improvement to phase I, GED II has undertaken several assessments and analyses which have provided stakeholders with a good basis of information (including this evaluation). The following are the main project-related analytical documents that have focused on the gender dimension.

* The Mid-Term Review Report (October 2017) examined to some extent the gender dimension and found that the participation of women and men in trainings organized by the project was well-balanced.
* The GED team undertook a more thorough assessment in May 2018 which was aimed at examining “*human development benefits and gender mainstreaming through implementation of infrastructure energy efficiency measures in public buildings*”.[[55]](#footnote-56) The study concluded that the gender balance in GED trainings was less ideal.
* The May 2018 assessment was followed by a gender analysis of the GED II project in November 2018. The analysis was conducted to better understand gender aspects that need to be taken into consideration in order to maximize the impact of the GED project. The findings indicated that while GED I did take the gender dimension into account to some extent, several areas required further improvement.

These assessments and analyses set the stage for a number of improvements undertaken by the project in the second phase to ensure that men and women equally participate in and benefit from project activities. For example, to identify the different needs of men and women in the context of EE renovations of public buildings, the GED project developed a questionnaire which was shared by the management of institution to all employees, both women and men. The project addressed women separately from men and collected their views and opinions regarding EE measures that would improve their well-being and comfort in public buildings. To ensure that both women and men participated equally in the EMIS trainings, two participants from each institution were invited to the training events, encouraging at least one of the participants to be a woman. In 2019, 45% of women participated in EMIS trainings.

Activities under the project offered renewable energy solutions to vulnerable and marginalized households which were not connected to a commercial electricity installation. In Bosnia and Herzegovina, almost 3,000 households live without electricity. Energy poverty is shared between women and men and there is no solid data on the gender ratio. At the household level, energy needs have a significant gender aspect. Women are mostly solely responsible for household activities (especially in rural, marginalized communities) such as cooking, cleaning, taking care of children and the elderly. They have different energy needs than male family members. Without access to modern energy services, women and girls spend most of their day consuming basic household tasks, which prevents them from seizing education and job opportunities. Women are often aware of the local conditions and resources when it comes to energy needs. However, they have traditionally limited decision-making power about household purchases, including energy technologies. Because women are the primary users of energy equipment in many areas, and in order to reach the full potential of interventions, women have to be involved in the design and implementation of projects to meet their own energy needs. In the planning process, the project conducted needs assessments and, through consultation with potential beneficiaries, collected information on male and female needs related to potential intervention. Specific needs are considered to the extent permitted by the budget and technical capabilities of the planned solution.

Furthermore, the energy efficiency retrofits of public buildings have benefitted more women than men, as they have a larger number/percentage of female users/employees (64.5% employees and 50.9% users). Especially in educational institutions, women employees are in significant majority. Also, it is a well-known fact that women face more street harassment and violence than men, and the relationship between poor street lighting and gender-based violence is global and widespread. Therefore, the implementation of LED lighting systems was not only a cost saving, but also an effective way of reducing crime. Installing efficient lighting technology in the right places ensured that everyone’s needs were met, especially those of non-motorized road users (mostly women, children, youth and elderly people). In order to address the recommendations regarding the lighting system, the GED project ensured the installation of lighting near back doors and in closed alleys/dead end streets, where service staff usually enter/exit in the early and late hours of the day.

Overall, GED II has made significant improvements compared to GED I in designing and implementing its activities with a much better sense of awareness about the involvement of men and women in its activities as stakeholders or beneficiaries. This approach should be maintained and further enhanced in the third phase of the project.

# LESSONS LEARNED

The GED project has been a learning experience which has generated a large body of knowledge for the country’s institutions and UNDP. The following are some key lessons identified through the evaluation from the experience of this project.

***Lesson 1: A first lesson drawn from this project is the importance of co-financing as a crucial indicator of genuine interest by local governments and a pre-condition for their meaningful engagement with the project.***

One of the GED project’s most important achievements is the trigger effect it has had on unlocking investments in energy efficiency in public buildings. The significant amount of co-financing generated by the project at all levels of government and throughout the country is a sign of genuine interest in the activities and ideas underpinning the GED concept and a clear indicator of the project’s success. The approach taken by the project team to capitalize on this interest has delivered practical results. First, a lot of effort has been expended on building partnerships and forging trust with all relevant partners. Trust has been the cornerstone of this project. Second, the project has invested significant resources in changing the mindset and psychology of key partners around the issue of energy efficiency in public buildings, enabling them to feel comfortable about the idea of energy efficiency improvements and the benefits emanating from them. Third, co-financing requirements have been gradually stepped up, matching the increase in the partners’ level of awareness on the benefits of energy efficiency. The tightening of co-financing requirements is going to be maintained in the project’s phase III, which is an adequate decision that is expected to improve the efficiency of the project as it will release resources for more projects in new areas that have not been reached yet by the project. All in all, the approach employed by the GED project has strengthened considerably the ownership and sustainability of project activities and results.

***Lesson 2: Another lesson of this project is that information about the financial feasibility of potential EE measures is an additional precondition for the mobilization of investments.***

Another lesson that can be drawn from the experience of the GED II project is the importance of clear information about the benefits of potential EE measures – especially, the financial feasibility of specific EE investments. These investments will not be undertaken if there is no clarity about their cost and benefits. Hence, the importance of energy audits (evaluations) promoted by the project and the collection of all the information produced by these audits into one database (the EMIS system in the Federation and in Republika Srpska). The EMIS system is an important tool for the prioritization of EE investments, analysis of information and reporting of results. By allowing parties to estimate financial returns from EE investments, EMIS provides a powerful incentive to local governments for the undertaking of EE initiatives. EMIS has also become an important reporting tool for the government – including in the context of the Energy Community initiatives. Thanks also to GED’s support over time, the system has become by far the best source of EE information in the country.

***Lesson 3: A third lesson is that the operationalization of the “Revolving Fund” failed because of the lack of interest in non-grant investments by the various government entities. Despite this failure, the project should continue to further incentivize loan-based investments in cost-effective EE projects.***

Another important lesson from this project may be drawn in regards to the “*Revolving Fund*” mechanism whose development was pursued by the project. GED II had been designed on the premise that the Revolving Fund would be operational not only in the Federation, where it was initially established in 2016, but also in RS where it was actually never fully established.[[56]](#footnote-57) As has been noted in this report, the GED II project was not able to fulfil its objective of promoting non-grant financing of EE projects through the “Revolving Fund”. This objective failed because of the lack of interest in non-grant investments by the various government entities involved in infrastructure investments. There is still a strongly entrenched mentality of grant-based investments, coupled with the insecurity of the cost-effectiveness of the investments.

The dynamics of the failure of the revolving fund have already been noted in this report. In 2018, the Federation’s Environmental Fund launched two public calls for EE infrastructure initiatives – one based on grants and the other based on the “revolving fund” (non-grant). Although the UNDP/GED team advised against the launching of the two calls in parallel, the environmental fund proceeded with the launch. The non-grant call received limited interest and subsequently the environmental fund decided in 2019 to freeze the “revolving fund”. In response to this situation, the project team adjusted its approach and started cooperating with the other UNDP project (Urban LED) which had been assisting the Federation Environmental Fund in the establishment of an “ESCO window financing” for energy efficiency and renewable energy investments in public sector buildings, public lightning as well as small and medium enterprises, as an alternative non-grant-based financing model. The GED project has also planned to support the environmental funds in establishing an ESCO-related module in EMIS.[[57]](#footnote-58)

The Ministry of Spatial Planning in the Federation, with support from KfW, is working on the establishment of a Revolving Fund focused on public buildings, outside the realm of the environmental fund and with a much narrower mandate than the original scope of the “revolving fund” concept under the environmental funds. The added-value of this new “fund” with such a limited scope seems uncertain. A key lesson here is that strong coordination is required at the national level and among development partners to be consistent in how new institutional structures, such as an EE “revolving fund”, are pursued when existing institutions are already in place.

***Lesson 4: A fourth lesson drawn from the project it that due to energy efficiency’s cross-cutting nature, inter-institutional coordination is crucial for the widespread adoption of energy efficiency.***

The experience of the GED project illustrates in stark terms how important inter-institutional coordination is for something like energy efficiency that cuts across sectors and levels of government. Given Bosnia and Herzegovina’s complex governance structure, the GED project team has had to work tirelessly across levels of government and geographical areas to build an array of partnerships that have underpinned the infrastructure projects across the country and the data entry in the EMIS system from all levels and areas. A lot of what the GED project represents is coordination, negotiation, communication, consensus-building, conflict resolution, and so on. Often these dimensions of energy efficiency projects are underestimated or neglected, as energy efficiency is perceived as a purely technical matter. But the GED project reminds us that in this area coordination among a bewildering array of institutions is essential. Certainly, coordination in this sector is still very challenging and delays result from the complexity of the decision-making process. Nevertheless, the project team has shown that some of these challenges can be overcome through extensive communications and a clear strategic approach – such as the bottom-up approach undertaken by the GED project.

# CONCLUSIONS

The benefits of the GED project are widely recognized among stakeholders and have been highlighted throughout this evaluation report. The number of infrastructure projects undertaken under the project is impressive. As evidenced by the interviews conducted for this evaluation, the people who use this infrastructure have experienced a tangible change in their life. The impressions collected from stakeholders through the interviews for this evaluation are highly positive. Even in areas where there has been limited progress, there is a widely-shared recognition that the bottlenecks have been too daunting for the project team to surmount. The partnerships and trust that have been forged through this project between the various levels of government, UNDP and the Government of Sweden are impressive. Equally impressive is the amount of co-financing that has been generated. Another excellent practice of this project is the sharing of resources and division of labour with other projects, be they from UNDP, World Bank, or other development partners.

The work on the institutionalization of energy management activities within public sector buildings through the preparation of detailed energy audits and by enabling building managers to monitor energy consumption is important. Equally crucial is the project’s continued support for the establishment and sustainability of the EMIS system under the environmental funds. This comprehensive system has the capacity to offer key technical data for the classification of buildings, public lighting systems and energy efficiency/renewable energy investments based not only on their energy savings potential, but also socio-economic benefits. The environmental funds themselves to a large extent are structures that have largely benefitted from the GED interventions over time.

It is very encouraging that the third phase of the project has already been agreed and a Project Document has already been developed. The design of the new phase looks sound and is grounded in solid foundations laid by the previous two phases and the strong partnerships that have been forged since 2013. Also, the shifting of the focus to cover energy efficiency in the SME sector is a positive step. There is also a clear expectation that the implementation of GED III will be well-coordinated with the other Sweden-funded project on energy efficiency in the residential sector.

Going forward, this evaluation recommends that the attention of project stakeholders and decision-makers be turned to two crucial matters – *sustainability of financing* and the *power of social norms*.

Sustainability of Financing

While the grants used by the GED project have been crucial in unlocking significant budgetary resources from various levels of government for investments in energy efficiency, a lot more potential could be unlocked through the market mechanism. Grants are good in the short run for demonstrating the effects of a certain approach or technology, but in the long run they are not sustainable. Only market-based solutions are sustainable in the long run. Loans are still something that has remained out of the reach of the project, although a key objective identified in the Project Document. The freezing of the Revolving Fund in the Federation and the complete absence of a revolving fund in Republika Srpska did not allow the project to make progress towards that objective. However, the idea of placing EE investments in Bosnia and Herzegovina on a more sustainable footing should not be dropped.

This evaluation does not provide a prescription on what type of financing mechanism should be developed as that should be a decision grounded in the specifics of the context and made on the basis of the careful analysis of what is politically, administratively and financially feasible at this point in time in Bosnia and Herzegovina. But the overall thrust of the process should be on creating a model that is more market-based and that could ideally also involve the commercial banking sector. If the idea of the “*ESCO financing window*” promoted by the other UNDP project will work, then the GED project should make use of the platform for channeling its support and resources. If another Revolving Fund will be made to work either in the Federation or Republika Srpska, the project should work with that too, and ensure that it is well coordinated with all relevant stakeholders to avoid duplications and resource waste. The de-risking subsidy of interest rates for commercials loans in the SME sector foreseen under GEF III is an important step towards greater involvement of the commercial banking sector into the financing of EE investments. Greater involvement of commercial banks in energy efficiency investments will be key for the sustainability of achievements in this area.

Power of Social Norms

A growing body of research in behavioral economics and psychology indicates that non-price interventions can have a significant effect on peoples’ energy behavior. Most people do not weigh up the costs and benefits of energy efficiency behaviors and investments. Even when an energy efficiency investment appears to be in the owner’s financial interest (makes sense from a cost-benefit perspective by saving the owner money through reduced use of energy), many sidestep it. People value things like comfort, esthetics and status way more that its energy efficiency and potential impact on the environment. People are rarely rational decision-makers weighing costs and benefits in an objective manner. They are subject to social, cognitive and behavioral factors and biases which shape their behavior in important ways. Many of these biases stem from simple ‘rules-of-thumb’, ‘heuristics’ and mental ‘shortcuts’ that enable people to process information effortlessly, thereby accelerating their problem-solving and decision-making.

Behavioral insights tell us that social norms encourage the adoption of green behaviors. People are heavily influenced by what their family, friends and neighbors do, regardless of the costs and benefits of those actions. They adopt the opinions, judgements and behaviors of people around them because they believe in the wisdom of the community. For example, building owners are more likely to install a thermostat if one of their friends or neighbors has done so. This highlights the importance of engaging individuals as members of a community, rather than only as energy consumers of energy. By overlooking these behavioral biases, traditional information-based educational and awareness-raising, EE programmes have often failed to generate significant action in both the energy saving behavior and investment fronts. GED has already undertaken a massive media campaign that has reached many people, a look at the various internet postings available through GED or energy efficiency in Bosnia and Herzegovina reveals that the messages are not always narrowly targeted or specific in nature in order to trigger the recipient’s reaction. In the project’s third phase, the issue of social norms and mentality could be approached more strategically by using more effectively the latest findings from experimental psychology and behavioral economics (i.e. Framing and Psychological Cues, Status Quo Bias/Inertia, Discounting the Future, etc.).

# RECOMMENDATIONS

This evaluation makes the following set of recommendations which are derived from the analysis presented in the previous sections of this report.

|  |  |
| --- | --- |
| **RECOMMENDATION** | **RESPONSIBLE PARTIES** |
| **Recommendation 1**  The project’s foremost attention at this stage (before commencing the GED III pgase) should be on completing by the end of 2021 the outstanding activities outlined in section 3.3.2 of this report.   * As a first step, the project team should establish more specifically and firmly through their work plan which of the remaining activities are feasible to be completed under the current phase until the end of 2021 and which activities could be carried over into the new phase. This information should be based on a sound analysis of the various factors around these activities, including clear timelines and goalposts, presented clearly in a document. * The project team should also seek to obtain clear commitments from the respective government counterparts on pending key decisions – such as the approval of the rulebooks, by-laws, etc. A clearer sense of when these decisions are expected to be made will be useful at this stage and should be reflected in the planning documents. | * **Project Team supported by UNDP CO and respective government partners** |
| **Recommendation 2**  Looking forward to GED III, the UNDP CO should maintain and further strengthen coordination with all relevant stakeholders operating in the EE area.   * The GED project is already well-coordinated with the other UNDP projects and with the WB’s BEEPS programme. However, stronger cooperation should be forged under GED III with other players in this area, especially with the upcoming KfW and EBRD activities. * Under GED III, UNDP and the Swedish embassy should join efforts in strengthening the coordination platform with all development partners in this area. The idea of the “*Revolving Fund*” that is under discussion between the Ministry of Spatial Planning in the Federation and the KfW should be discussed more widely, especially in the context of the GED project’s efforts to support the establishment of the revolving funds under the two environmental funds. The KFW-supported concept only concerns the public building sector, whereas the “revolving fund” concept under the environmental funds pursued for years under the GED project is more comprehensive in nature and inclusive of the public buildings. UNDP CO and the Swedish Embassy, jointly with the respective counterparts, should forge a harmonized approach on the revolving fund issue. Also, UNDP and the Swedish Embassy should advocate for a more systematic approach to the establishment/operationalization of the revolving fund in the Federation and Republika Srpska. In both entities, the GED platform and the existing infrastructure of environmental funds represents a solid foundation on which to ground activities on the establishment of revolving funds. | * **UNDP** * **Swedish Embassy** |
| **Recommendation 3**   * Under GED III, the project should aim for greater sustainability by ensuring the establishment of a durable and well-functioning loan mechanism for EE investments in buildings that enables building owners to remove the budgetary restrictions that often constrain their options. * When it comes to the SME sector (which will be a key target of the project’s third phase), a market-based based approach to energy efficiency investments will be crucial. Also, the de-risking subsidy of interest rates for commercials loans in the SME sector foreseen under GEF III should be pursued towards greater involvement of the commercial banking sector into the financing of EE investments. * Greater involvement of commercial banks in energy efficiency investments under GED III will be key for the sustainability of achievements in the EE area. | * **UNDP** * **Relevant Government Entities** * **Swedish Embassy** |
| **Recommendation 4**  UNDP should consider more strategically the role of social norms as a crucial determinant of perceptions and decisions about energy efficiency.   * UNDP interventions should be more focused on what actually works in practice and should be cognizant of the norms that prevail in the communities. This requires a more analytical and data-driven approach to awareness-raising and publicity activities, which so far seem to have been more generic in nature. * In GED III, the issue of social norms and mentality could be approached more strategically by using more effectively the latest findings from experimental psychology and behavioral economics (i.e. Framing and Psychological Cues, Status Quo Bias/Inertia, Discounting the Future, etc.), rather than taking broader information-sharing approaches using large-scale marketing campaigns. | * **UNDP** |

# ANNEX I: EVALUATION’S TERMS OF REFERENCE

Background and Purpose of the Consultancy:

From an energy consumption perspective, Bosnia and Herzegovina is characterized as a country with very high inefficiency within the residential, non-residential/public, industry, and service sector. At the same time, Bosnia and Herzegovina has one of the most significant energy conservation potentials in the region and could base its further mid-term economic development and generation of new employment on energy efficiency improvement measures in the residential and public sector. Moreover, the average energy consumption of a public building in Bosnia and Herzegovina is three times higher than the average in the countries of the European Union (EU). In accordance with the EU Eco-Management and Audit Scheme – EMAS, public buildings across the country are categorized as completely energy inefficient. In order to meet energy intensive consumption demands, a significant amount of budget funds must be allocated for energy expenditures of public buildings (educational, health, cultural, municipal and entity/state institutions etc.) representing a major proportion of the already inadequate public budget.

The energy sector in Bosnia and Herzegovina is organized according to the General Framework Agreement for Peace in Bosnia and Herzegovina, positioning the entity line ministries (of the Federation of Bosnia and Herzegovina and Republika Srpska) as the key players in the Energy Efficiency / Renewable Sources framework while giving the state-wide level, represented by the Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina a coordinating/reporting role for multilateral binding agreements. As such, the direct implementation of the Energy Efficiency / Renewable Sources related activities and EU acquis[[58]](#footnote-59) (such as achieving energy saving targets, energy monitoring, enforcements of legislations, financing mechanisms etc.) is to be carried out on the entity/cantonal levels.

Bosnia and Herzegovina adopted the National Energy Efficiency Action Plan for the period of 2016-2018, while the next Plan 2019-2021 should be adopted by the end of 2020 and National Energy and Climate Plan for the period of 2021-2030 is in drafting phase. These are the important steps towards fulfilling the requirements from the Energy Community Treaty[[59]](#footnote-60). In addition, Framework Energy Strategy of Bosnia and Herzegovina until 2035 was adopted in August 2018, creating conditions to draw IPA funds and funds from the Western Balkans Investment Framework (WBIF) for the energy sector, as well as to attract investors to the sector. Federation of Bosnia and Herzegovina has adopted updated the Renewables Action Plan in November 2018 and set tentative targets for the share of renewable energy in the total final consumption in the heating and cooling, electricity, and transportation sectors until 2020. At the end of 2018, two regulations regarding energy efficiency certification of buildings were adopted: Decree on the conditions for granting and revoking authorizations for performing energy audits and energy certification of buildings, and Decree on conducting energy audits and issuing energy certificates in the Federation of Bosnia and Herzegovina. In 2019, the Rulebook on energy efficiency information system and energy management in Federation of Bosnia and Herzegovina was adopted. Adoption of the relevant legislative and strategic frameworks in the area of energy management sets foundations for further development of energy efficiency, renewable energy, and energy management sector in the country, however there is a lot of work ahead in order to fulfil all obligations in accordance with the Energy Community Treaty.

Country context related to COVID – 19. On March 11, 2020 the [World Health Organization declared COVID-19 a global pandemic](https://www.who.int/emergencies/diseases/novel-coronavirus-2019). While the disease was slow to spread to Bosnia and Herzegovina and the Western Balkan countries at first, since February 2020 the number of confirmed cases is climbing rapidly. A state of emergency was declared in Bosnia and Herzegovina by both entity governments on 16 March 2020[[60]](#footnote-61) and at the state level – on 17 March 2020[[61]](#footnote-62).

While new cases continue to appear throughout Bosnia and Herzegovina and in steady numbers, the stabilization trendline is visible with a plateau which currently allows the health system to maintain control and sufficient response capacities. The number of active daily cases per 100,000 population is estimated at 178,8 (8th September); and the weekly number of new cases per 100,000 population at 51,50 (first week of September). Confirmed cases in Bosnia and Herzegovina, as reported on 8 September 2020, is 21,961 and deaths reported as associated with covid-19 is 669. The R-factor (or reproduction number, indicating the number of people that one infected person will pass the virus on to, on average) has dropped to 1.04 for Bosnia and Herzegovina in the past two weeks, signalling a manageable epidemiological situation.

COVID situation has had a significant impact on the project implementation, particularly in the part of Energy Efficiency / Renewable Sources infrastructure measures in public buildings and public lighting systems. Infrastructural measures account for approximately 74% of the total 2020 project delivery target. Moreover, for the infrastructure works, the co-financing from local governments must be ensured in the amount from 50% to 70% of the total value of the investment which was challenging from the beginning of the COVID - 19 situation. In general, there are still present uncertainties in the budgets of the sub-national/local governments planned for infrastructure works for energy efficiency and renewable energy measures.

**About the Project**

|  |  |  |
| --- | --- | --- |
| **Project title** | Green Economic Development 2nd phase | |
| **Atlas ID** | 00105415 | |
| **Corporate outcome and output** | UNDP Strategic Plan Outcome 1; Output 2.5.2 | |
| **Country** | Bosnia and Herzegovina | |
| **Date project document signed** | 24.01.2018. | |
| **Project dates** | 1 February 2018 | 28 February 2021 |
| Beginning | End |
| **Project budget** | 18,1 mill USD | |
| **Project expenditure at the time of evaluation** | 9,283,901 | |
| **Funding source** | Government of Sweden and Local Governments | |
| **Implementing party** | UNDP | |

Funded by the Government of Sweden, the [**Green Economic Development 2nd phase**](https://open.undp.org/projects/00105415) (GED II) project, contributes to faster creation of an environment attractive for Energy Efficiency / Renewable Sources investments in the public and residential sector, generation of new employment and creation of clear energy monitoring and targets achieving mechanisms in Bosnia and Herzegovina. The project is a follow up to the Green Economic Development project (September 2007 - December 2022).

The **overall objective** of the Green Economic Development 2nd phase project is to contribute to creation of a favorable environment for investing in Energy Efficiency / Renewable Sources infrastructure measures in Bosnia and Herzegovina, thus contributing to Bosnia and Herzegovina’s EU accession process, targeting the Energy Performance Building Directive, Energy Efficiency Directive and Renewable Energy Directive. The project **specific objectives/outcomes** focus on enabling all levels of governments in Bosnia and Herzegovina to monitor, analyze and evaluate energy consumption, costs, emission, energy investments and savings data from public sector buildings, as well as to support energy efficiency and renewable energy targets (in accordance with the Energy Community Treaty and its obligations) by providing financial support to Energy Efficiency / Renewable Sources infrastructure works.

Specifically, the project outcomes are:

Outcome 1: To develop capacity and strengthen skills of Environmental Fund staff;

Outcome 2: To develop capacity and strengthen skills of energy professionals;

Outcome 3: To establish energy monitoring and reporting mechanisms in Bosnia and Herzegovina;

Outcome 4: To enable financing for Energy Efficiency / Renewable Sources infrastructure projects in Bosnia and Herzegovina;

Outcome 5: To implement cost-optimal, green jobs generating and emission reducing Energy Efficiency / Renewable Sources infrastructure projects in Bosnia and Herzegovina;

Outcome 6: To increase general public’s understanding of Energy Efficiency / Renewable Sources benefits;

Outcome 7: To provide access to energy for off grid households in Bosnia and Herzegovina.

*Detailed outline of the Project Result Framework is available in* [*Annex 1*](http://documents.undp.ba/procurement/TORAnnexes.zip)*.*

Partnerships: Project Board, consisted of representatives from the Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina and both entity Environmental Funds, is responsible for providing strategic guidance and overseeing the Green Economic Development 2nd phase project implementation. The project partners with different levels of governments in Bosnia and Herzegovina to implement specific project components. Green Economic Development 2nd phase project created partner relationships with 8 Cantonal and 35 Local Governments for the purpose of implementation of infrastructural works. Additionally, the project has a successful partnership with relevant entities ministries in the field of energy and environmental protection with whom it works closely on capacity building and development of reporting mechanisms. *Overview of key stakeholders and partners and their roles in evaluation is provided in* [*Annex 2*](http://documents.undp.ba/procurement/TORAnnexes.zip)*.*

Target groups and beneficiaries: Final beneficiaries of the Green Economic Development 2nd phase project are the users of public buildings, health, educational and cultural institutions in which the infrastructural works on improvement of energy efficiency are implemented, citizens and local communities in participating local governments with improved public lightning systems, municipal authorities with reporting mechanisms in place, and public sector buildings monitored through Energy Management Information System (EMIS). It is expected that by the end of the project, 90 municipal authorities will have the reporting mechanisms in place and that 7,000 public sector buildings will be monitored through EMIS database and trained on EMIS use, 600 stakeholders participated in the training programme for energy management, skills and knowledge development, as well as 24 households provided with renewable energy solutions in off grid areas in Bosnia and Herzegovina.

Main achievements: In two years of the project implementation, infrastructure measures on improvement of energy efficiency were implemented on 54 public buildings in 27 local governments, benefitting more than 300.000 citizens. Six local governments have improved public lightning systems, ensuring more secure surroundings for the citizens. Photovoltaic solar systems were installed in 16 returnee households. Sixteen of grid returnees’ households without electricity, living in remote areas of Bosnia and Herzegovina now have access to their own electricity for basic domestic use.

Project’s relevance and alignment: The project is aligned with the national and UNDP development frameworks and goals (United Nations Development Framework for Bosnia and Herzegovina 2015-2020 and UNDP Country Programme Document 2015 - 2020). It contributes to targets set within the Sustainable Development Goals (SDG): 7-Affordable and Clean Energy, 8-Decent Work and Economic Growth, 11-Sustainable Cities and Communities and 13-Climate Action. *Overview of relevant documentation is provided in* [*Annex 3*](http://documents.undp.ba/procurement/TORAnnexes.zip)*.*

Duties and Responsibilities:

Scope of work

**a) Purpose**

The purpose of this evaluation is to provide an impartial review of the **Green Economic Development 2nd phase project** in terms of its relevance, effectiveness, efficiency, impact, sustainability, management and achievements. The information, findings, lessons learned and recommendations generated by the evaluation will be used by the Project Board, UNDP, Government of Sweden and other relevant stakeholders to strengthen the remaining project implementation and inform future programming.

**b) Objective**

The evaluation objective is to examine the overall performance of the **Green Economic Development 2nd phase project**, its results, inputs and activities, and how the outputs delivered added value to target groups and institutional beneficiaries. In a substantive analysis of the effectiveness of the project approach and feedback from beneficiaries and relevant stakeholders, the evaluation should assess cause and effect relations within the project, identifying the extent to which the observed changes can be attributed to the project. In addition, this evaluation aims to provide forward-looking recommendations to the Government of Sweden and UNDP in the field of energy management in Bosnia and Herzegovina.

**c) Scope**

The evaluation will assess the extent to which the planned project specific outcomes and outputs have been achieved since the beginning of the project and likelihood for their full achievement by the end of the project on 28 February 2021 (based on the Project Document and its results framework). The evaluation will look into the overall project performance and results, covering its empirical human development effects which emerged in the healthcare, education, safety and security, transparency and gender areas as a result of the implementation of energy efficiency measures in more than 54 public sector buildings across Bosnia and Herzegovina.

Specifically, the evaluation will look into critical project’s aspects, such as policy and legislative support in the area of energy management, development of financial mechanism and improved investment environment for green economic development and generation of employment. To the extent possible, it will also consider the relevance and influence of implemented infrastructure projects on the individuals and groups within the project’s targeted localities.

The evaluation will look into the project’s processes, innovations, strategic partnerships and linkages in the specific country’s context, that proved critical in producing the intended outputs and the factors that facilitated and/or hindered the progress in achieving the outputs, both in terms of the external environment and risks, as well as internal, including: weaknesses in project design, management, human resource skills, and resources.

Finally, the evaluation will assess how has the project adjusted its implementation strategy and approach to respond to new circumstances imposed by the COVID-19 pandemic.

Evaluation criteria and key questions

The **Green Economic Development 2nd phase project** evaluation is to answer the following questions, so as to determine the project’s relevance, performance, results, effectiveness, efficiency, impact and sustainability, including lessons learned and forward-looking recommendations. The evaluation questions are summarized below.

**Relevance**

* Were the project’s objectives relevant to the needs of the project beneficiaries, having in mind political, social, and institutional context of the country, and what are the project’s potentials to adequately contribute to development processes in the future?
* To what extent is the project aligned with the relevant national development frameworks, and UNDP strategic objectives and Sustainable Development Goals (SDG) 7-Affordable and Clean Energy, 8-Decent Work and Economic Growth, 11-Sustainable Cities and Communities and 13-Climate Action?
* To what extent is gender equality respected and mainstreamed within the project implementation?
* To what extent does the project contribute to human rights of target groups?
* What steps has the project taken to adjust its implementation strategy and approach to new circumstances imposed by the COVID-19 pandemic?

**Effectiveness**

* To what extent were the project’s activities implemented and intended results achieved? What are the main project’s accomplishments? Overview of the project progress against project indicators is to be provided in an Annex of the Evaluation Report.
* To what extent have the project’s actions contributed to intended outcomes of the requisite quality and are they effective? If so, why? If not, why not?
* What are the positive or negative, intended or unintended, changes brought about by the project’s interventions? This may, inter alia, include an overview of the number of beneficiaries benefiting from the energy efficiency infrastructure projects implemented in public buildings, low emission objectives addressed, level of local governments’ co-financing and other.
* To what extent has the project contributed to strengthening partnership between relevant institutions?
* How effective are the results achieved by the projects (for local/municipality/Cantonal/Entity levels of Bosnia and Herzegovina), considering bifurcated approach to selection in Bosnia and Herzegovina?
* To what extent did the project’s actions facilitate improvement of legislation and transposition of EU Directives related to energy management?
* To what extent has the project managed to institutionalize and anchor the Methodology of data entry and reporting using the Energy Management Information System in Bosnia and Herzegovina?
* To what extent and through what mechanisms has the project managed to promote participatory decision making and transparent project-based funding of energy efficiency measures in public buildings, co-financed from government budgets?
* To what extend has the project outreached marginalized groups (i.e. youth, persons with disabilities, returnees, internally displaced, minorities…) and supported gender mainstreaming and women’s empowerment?

**Efficiency**

* Have resources (financial, human, technical) been allocated strategically to achieve the project results?
* Are there any weaknesses in project design, management, human resource skills, and resources?
* To what extent the support to governments and institutions as implementing partners has shown to be an efficient implementation modality?
* To what extent have the target groups and other stakeholders taken an active role in implementing the project? What modes of participation have taken place? How efficient have partner institutions been in supporting the project implementation?
* Were the project activities implemented as scheduled and with the planned financial resources?
* Where there any duplication of efforts?

**Impact**

* What are the project effects and impact in terms of implemented energy efficiency measures, both in qualitative, as well as quantitative terms, on the overall improvement of quality of life of citizens in targeted areas?
* What are the main benefits (qualitative and quantitative) for target groups and beneficiary institutions?
* To what extent are key stakeholders/final beneficiaries satisfied with the project implementation, specifically in terms of the partnership support and what are specific expectations for the potential follow-up assistance?
* What are the overall project effects and impact in relation to the governments’ capacities to improve funding for energy management, the culture of transparency and participatory decision-making?
* To what extent has the project elevated cooperation between relevant institutions?
* How have cross-cutting issues, such as gender, disability, and reaching the most vulnerable children, been effectively taken up?
* What is the impact of COVID-19 on the project implementation and how the limitations imposed by the pandemic were lifted?

**Sustainability**

* To what extent are the project outcomes and outputs sustainable? How could project results be further sustainably projected and expanded, having in mind the potential future contribution of financing mechanism for improvement of energy efficiency?
* To what extent has the project approach (intervention strategy) managed to create ownership of the key national stakeholders?
* To what extent have the capacities of relevant government institutions been strengthened to sustain the results of the project? Which are, in this regard, challenges to overcome or potentials to be unlocked in the future?
* What would be directions to expand positive effects of the project’s concept in the area of inclusive public services, and gender equality in the future?
* At this stage of project implementation, what could be possible after-project priority interventions and general recommendations, which could further ensure sustainability and scaling up of project’s achievements?
* What would be future priority interventions to ensure long-term sustainability of the project’s achievements and contribute to further development of energy management and energy efficiency, having in mind the current COVID- 19 circumstances?

**Coherence**

* How effective was the project’s interaction with other complementary projects, specifically other initiatives funded by the Government of Sweden in order to trigger synergies maximizing development results?

**The evaluation shall further assess:**

* If the project has had any positive or negative effects on gender equality? Could gender mainstreaming have been improved in planning, implementation or follow up?
* If the project has been implemented in accordance with a human rights perspective: i.e. Have target groups been participating in project planning, implementations and follow up? Has anyone been discriminated by the project through its implementation? Has the project been implemented in a transparent fashion? Are there accountability mechanisms in the project?
* To what extent is poverty, in its different dimensions, addressed in the design, implementation and follow up of the intervention? What/which dimensions are addressed? How could the intervention be strengthened so that poverty reduction is more explicitly addressed?
* Has the media coverage Has the communication and outreach of the Project been satisfactory?

The evaluation needs to assess the degree to which the project initiatives have supported or promoted gender equality, a rights-based approach, and human development. In this regard, [United Nations Evaluation Group’s guidance on Integrating Human Rights and Gender Equality in Evaluation should be consulted.](file:///C:/Users/azorlak/Desktop/The%20evaluation%20need%20to%20assess%20the%20degree%20to%20which%20UNDP%20initiatives%20have%20supported%20or%20promoted%20gender%20equality,%20a%20rights-based%20approach,%20and%20human%20development.%20In%20this%20regard,%20United%20Nations%20Evaluation%20Group’s%20guidance%20on%20Integrating%20Human%20Rights%20and%20Gender%20Equality%20in%20Evaluation%20should%20be%20consulted.)

Methodology:

Based on the [UNDP Evaluation Guidelines,](http://web.undp.org/evaluation/guideline/covid19.shtml) [UNEG Norms and Stand for Evaluations (2016)](http://www.unevaluation.org/document/detail/1914) and in consultations with UNDP Country Office, the evaluation will be participatory, involving relevant stakeholders.

The evaluation will be conducted by the Evaluation team composed of an International Evaluation Consultant (Evaluation Team Leader) and National Evaluation Consultant.

The National Evaluation Consultant will bear responsibility for providing support to the Evaluation Team Leader in conducting the final project evaluation, in line with the evaluative approaches/ methodologies agreed and proposed in the Evaluation Inception Report, to implement the evaluation effectively in the COVID – 19 pandemics circumstances, including application of safety guidance, extended desk reviews and virtual stakeholder meetings and interviews.

The proposed methodology may employ any relevant and appropriate quantitative, qualitative or combined methods to conduct the Project Evaluation, exploring specific, gender sensitive data collecting and analytical methods and tools applicable in the concrete case. Together with the Evaluation Team Leader, the National Evaluation Consultant is expected to creatively combine the standard and other evaluation tools and technics to ensure maximum reliability of data and validity of the evaluation findings.

Limitations to the chosen approach/methodology and methods shall be made explicit by the Evaluation team and the consequences of these limitations discussed in the tender. The Evaluation team shall to the extent possible, present mitigation measures to address them. A clear distinction is to be made between evaluation approach/methodology and methods. A gender responsive approach/methodology, methods, tools and data analysis techniques should be used.

The National Evaluation Consultant is expected to facilitate the *entire evaluation process* with careful consideration of how everything that is done will affect the use of the evaluation. It is therefore expected that the evaluators, in their application, present the methodology on i) how intended users are to participate in and contribute to the evaluation process and ii) methodology and methods for data collection that create space for reflection, discussion and learning between the intended users of the evaluation.

In cases where sensitive or confidential issues are to be addressed in the evaluation, evaluators should ensure an evaluation design that do not put informants and stakeholders at risk during the data collection phase or the dissemination phase.

Standard UNDP evaluation methodology would suggest the following data collecting methods:

* Desk review:Following the initial meeting, the National Evaluation Consultant will support the Evaluation Team Leader in conducting a detailed review of all relevant documents produced during project implementation. Documentation includes but is not limited to the project materials and deliverables including the Project Document, theory of change and results framework, monitoring and project quality assurance reports, annual workplans, consolidated progress reports, studies and publications produced by the project etc. *An extensive list of documents for desk review is provided in* [*Annex 3*](http://documents.undp.ba/procurement/TORAnnexes.zip)*.*
* Key informant interviews: Using virtual technological solutions, the National Evaluation Consultant will help the Evaluation Team Leader remotely interview representatives of main institutional partners, Swedish Governments and UNDP, other relevant stakeholders and partners. For the interviews, the evaluators are expected to design evaluation questions around relevance, effectiveness, efficiency and sustainability criteria, according to different stakeholders to be interviewed. *Detailed list of main stakeholders that may be considered for meetings is provided in* [*Annex 2*](http://documents.undp.ba/procurement/TORAnnexes.zip)*.*
* Meetings / focus group discussions with relevant stakeholders will be conducted remotely.
* Other methodologies, as appropriate, such as case studies, statistical analysis, social network analysis, etc. Skype interviews, mobile questionnaires, online surveys, collaboration platforms (slack or yammer) and satellite imagery are recommended to be used to gather data. Stakeholders that are dealing with existing emergencies should be given advance notice.
* Field visits will be additionally considered, depending on the officially noted epidemiological situation related to the COVID-19 pandemic, and with compliance to all epidemiological measures effective in the country.

As an integral part of the evaluation report and specifically under the impact criteria, the National Evaluation Consultant, together with the Evaluation Team Leader will review the project effects and impact on its target groups. In this context and using the online survey, the consultancy is expected to gain insights from both the partners and the beneficiaries.

**Stakeholders involvement:** During the evaluation process, the National Evaluation Consultant together with the Evaluation Team Leader, is expected to talk to senior representatives of the UNDP, Government of Sweden and the project team, key partners and stakeholders. Initial briefing and evaluation debriefing to obtain the critical feedback on the evaluation report, are envisaged. To assess project performance, approach and modalities, the Evaluation Team Leader will talk with the members of project board, Ministry of Foreign Trade and Economic Relations, both entity Environmental Funds. In addition, the views of representatives of Ministry of energy and environmental protection, as well as representatives of Sarajevo Canton government, and Banja Luka City will be considered to obtain critical insight and information on the project activities and results. During these meetings, it would be important to record and accumulate inputs necessary not only for the project evaluation, but also to highlight recommendations and advise on potential project follow-up phase.

The expected duration of the assignment is up to 22 work-days, in the period November/December 2020.

Evaluation tasks / deliverables:

Following the initial briefing and a detailed desk review, the National Evaluation Consultant will help the Evaluation Team Leader deliver the following products and tasks:

* **Inception Report (10-15 pages)** will be presented before the evaluation starts, showing how each evaluation question will be answered by proposing methods, sources of data and data collection procedures. The Inception Report should elaborate an **evaluation matrix** (*provided in* [*Annex 4*](http://documents.undp.ba/procurement/TORAnnexes.zip)) for the project and propose a schedule of tasks, activities and evaluation deliverables. The Evaluation Inception Report should follow the structure proposed in the [UNDP Evaluation Guidelines, p. 22-23.](http://web.undp.org/evaluation/guideline/documents/PDF/UNDP_Evaluation_Guidelines.pdf)
* **Evaluation and data collection:** Upon the approval of the Inception Report and the evaluation work plan by the UNDP, the National Evaluation Consultant will help the Evaluation Team Leader carry out the project evaluation. **Data collecting methodologies presented in the Evaluation Inception Report should limit the exposure of any consultant, project team member, beneficiary or stakeholder to the pandemic,** therefore, strongly recommended is use of remote and virtual methodologies.
* **Draft Evaluation Report:** Based on the findings generated through desk review and data collection process, the National Evaluation Consultant will support the Evaluation Team Leader prepare and submit the Draft Evaluation Report to the UNDP team and key stakeholders for review. *Structure of the Report is outlined in* [*Annex 5*](http://documents.undp.ba/procurement/TORAnnexes.zip)*.*
* **Evaluation review process** (and eventual dispute settlement): Comments, questions, suggestions and requests for clarification on the evaluation draft will be submitted to the Evaluation Team Leader and the National Evaluation Consultant and addressed in the agreed timeframe. The Evaluation Team should reply to the comments through the **evaluation audit trail document**[[62]](#footnote-63). If there is disagreement in findings, these should be documented through the evaluation audit trail, while effort should be made to come to an agreement.
* **Evaluation debriefings:** will be held with UNDP Bosnia and Herzegovina, Government of Sweden representatives and other key stakeholders to present main findings and recommendations in a form of a Skype briefing. In addition, short briefings on immediate findings with UNDP senior management will be considered after completion of the initial assessment.
* **Evaluation Report** (maximum 50 pages of the main body) should be logically structured (structure of the Evaluation Report is outlined in [Annex 5](http://documents.undp.ba/procurement/TORAnnexes.zip) of this Terms of Reference), contain data and evidence-based findings, conclusions, lessons and recommendations, and be presented in a way that makes the information accessible and comprehensible. Finally, based on the evaluation findings and in a distinct report section, the Evaluation Team will provide **forward-looking actionable recommendations,** outlining key strategic priorities to be addressed in the potential next phase of the project.[[63]](#footnote-64)

# ANNEX II: INTERVIEWED STAKEHOLDERS AND REVIEWED DOCUMENS

List of stakeholders interviewed for the evaluation

|  |  |  |
| --- | --- | --- |
| No. | **Institution** | **Name of interviewed representative** |
| 1 | Ministry of Foreign Trade and Economic relations of Bosnia and Herzegovina | Mrs. Sanja Kapetina |
| 2 | Environmental Protection Fund of the Federation of Bosnia and Herzegovina | Mrs. Jasmina Kafedzi |
| 3 | Environmental Protection and Energy Efficiency Fund of the Republika Srpska | Mr. Srđan Todorović |
| 4 | Ministry of Energy, Mining, and Industry of the Federation of Bosnia and Herzegovina | Mrs. Aida Jelinic |
| 5 | Ministry of Energy and Mining Republika Srpska | Mr. Boris Lubarda |
| 6 | Ministry of Physical Planning of the Federation of Bosnia and Herzegovina | Mrs. Jasmina Katica |
| 7 | Ministry of Physical Planning, Civil Engineering and Ecology Republika Srpska | Mr. Milos Jokic |
| 8 | Ministry of Spatial Planning, Construction and Environmental Protection of Sarajevo Canton | Mrs. Zijada Krvavac |
| 9 | Government of the Western-Herzegovina Canton, Ministry of Spatial Planning, Construction and Environmental Protection | Mr. Miroslav Ramljak |
| 10 | Faculty of Mechanical Engineering in Sarajevo, Bosnia and Herzegovina | Mr. Izet Bijelonja |
| 11 | Una Sana Canton | Mrs. Vildana Zulic |
| 12 | Municipality of Stari Grad Sarajevo | Mrs. Selma Velic |
| 13 | Kindergarten Pinokio Zenica | Mrs. Jasmina Gasal |
| 14 | Musical school Sarajevo | Mrs. Tatjana Romanic |
| 15 | Faculty of Architecture Sarajevo | Mr. Mirza Basalic |
| 16 | UNDP Serbia - South-South cooperation | Mrs. Maja Matejić |
| 17 | Sweden's government agency for development cooperation | Mrs. Aisa Bijedic |
| 18 | UNDP Country Office | Ms. Amra Zorlak  Ms. Raduska Cupac |
| 19 | Project Team | Mr. Elvis Hadzikadic  Ms. Arnesa Borcak |

Documents reviewed for the evaluation

| **Evaluation tools** | **Sources of information** | |
| --- | --- | --- |
| Documentation review (desk study) | General documentation | * UNDP Programme and Operations Policies and Procedures * UNDP Handbook for Monitoring and Evaluating for Results |
| Programme documentation | * Project Document and annual work plans * Project Board Minutes * Annual Reports * Reports, presentations and studies produced by the project. |
| Governments documents/papers | Including relevant policies, laws, strategies, etc. |
| Third party reports | Including those of independent local research centres, etc. |
| Interviews with project team and key stakeholders | These included: | * Interviews/questionnaire with project staff. * Interviews with relevant stakeholders, including UNDP, Government officials of all levels, beneficiaries, Swedish SIDA, etc. |

# ANNEX III: RESULTS OF SURVEY WITH BENEFICIARIES

UNDP conducted research to determine how energy efficiency measures can contribute to the improvement of well-being. Additionally, the objective was to get an insight into the current comfort level of the building premises for its users. The research was conducted via online survey on a sample of 28 public buildings with implemented energy efficiency measures. Although the survey intended to include all public buildings reconstructed in 2019, several institutions did not respond to the questionnaire, while for others implementation of energy efficiency measures was still in progress. End of reconstruction for these buildings was completed in the beginning of 2020 leaving insufficient time to determine the upgrade of comfort level for its users and hence it affected the limitations of this research. Male users participated with 35% and female with 65%.

Level of professional /educational degree of respondents:

* University degree had 84% of respondents, out of which 78% females and 22% males;
* Higher education had 9% of respondents, out of which 73% females and 27% males;
* High school degree had 7% of respondents, out of which 80% females and 20% males.

Most female respondents (70%) were in the age group of 30-50 years, and the least (8%) in the age group of 20-30 years, as presented in Figure 6.

Classification of females by age group

Upon the final selection of energy efficiency measures that would be implemented on the buildings, UNDP took into consideration opinions of the building users. The survey has shown that 17% of respondents suggested thermal insulation of external walls (new facade) and 15% thermal insulation of roof. Also, 14% considered installation of LED luminaries in the premises as necessary measure, followed with 11% for installation of thermostatic valves on radiators and 10% with installation of exterior joinery. Replacement of boiler heating system suggested 5% of users while 6% recommended installation of solar collectors and 4% installation of photovoltaics.

Suggested energy efficiency measures of users before the final implementation

The survey contained questions on how inadequate temperature can cause many negative side effects on human health. Number of satisfied users with temperature in the premises during winter season after the implemented energy efficiency measures included 93% of users, whereas 66% were females and 34% were males (Figure 8). Based on the indicators of the survey, can be noticed the increase of satisfaction level among male users after the implementation of energy efficiency measures. Results of the second survey indicated that 81% of the respondents reported absence of electric heaters in their premises which could be used as an additional reheating device during the extremely cold winter periods. This occurrence could be a reasonable explanation of slight decrease of 7% in the satisfaction level of female respondents after the implementation of energy efficiency measures.

Satisfaction level of building users during winter season

Satisfaction level of building users during summer season indicated that level of satisfied male users increased up to 17% after the implementation of the energy efficiency measures. Female satisfaction level increased by 1%, as it can be seen in Figure 9. Analyzing poor increase of female satisfaction level after the implementation of measures, it is found that 77% of building users reported lack of air conditioning devices in their working premises. According to the recent studies, females are more likely to experience greater hypothermia comparing to males due to lower shivering capacity of their body which could also explain this occurrence of the research.

Satisfaction level of building users during summer season

Inadequate temperature can cause many negative side effects on human health, especially the health of vulnerable groups, such as women and children. Majority of respondents reported that inadequate temperature of the premises can cause negative health consequences, thus 70% of females reported frequent inflammation of organism as one of the most common issues, followed by reported 16% of respiratory issues, rheumatic diseases, fatigue and anxiety and 12% with decrease of immunity system. Also, 63% of female respondents believe that inadequate temperature can harm reproductive health while 43% of those females were familiar with the health issues of their female colleagues. However, upon the implemented energy efficiency measures the percentage of unsatisfied users decreased, especially female.

Consequences of inadequate temperature of premises on user’s health

# ANNEX IV: GED II PROJECT GENDER CHECKLIST

“Study on human development benefits and gender mainstreaming through implementation of infrastructure energy efficiency measures in public buildings” has been completed in May 2018, and “Gender analysis for GED II Phase” has been submitted in September 2018 and approved after joint consultations with consultant in November 2018.

|  |  |  |
| --- | --- | --- |
| Background and justification | Is the gender dimension highlighted in the background information to the intervention? | **Yes**  Project documents contain gender analyses and mainstreaming. |
| Does the justification include convincing arguments for gender mainstreaming and gender equality? | **Yes**  While the project as a whole does not have a particular gender focus, gender mainstreaming during planning, implementation and evaluation/monitoring is necessary. Furthermore, certain flagged components / activities have a considerable gender aspect. |
| Is data on gender analysis included and the different project-related needs of women and men analysed as part of the social analysis? | **Yes, partially**  Lessons learnt from social analyses conducted after the implementation of GED I project have been considered and incorporated into GED II project:  CRP 2018. Study of the Human Development and Gender Mainstreaming Through Energy Efficiency Effects  CRP. 2018. Study on Human Development Benefits and Gender Mainstreaming Through Implementation of Energy Efficiency Measures in Public Buildings  Further analyses during implementation and in particular for PC 6 is recommended |
| Goals | Does the goal reflect the needs of both women and men? | **Yes**  Since the goal of the project is improvement of energy efficiency conditions in objects, it reflects the needs of both, man and women. |
| Does the goal contribute to correcting gender imbalances through addressing practical needs of women and men? | **Yes, partially**  The Project goals address the needs of women and men, through facilitating better working conditions.  It is recommended to analyse and incorporate specific needs of (male and female) public building users and employees. |
| Does the goal even seek to transform the institutions that perpetuate gender inequality? | **No**  The project goals aren’t oriented towards transform the institutions that perpetuate gender inequality.  However, the gender analyses provide recommendations. |
| Objectives | Do the intervention objectives address needs of both women and men? | **Yes**  Through interventions on buildings, and public lightning both women and men needs are addressed. |
| Targets | Is there a gender balance be within the target beneficiary group? | **Yes**  Since the Project works most on the education institutions, there is gender balance be within the target beneficiary group |
| Activities | Are measures incorporated to ensure women’s inclusion and participation in project planning and implementation (e.g. interviewing women separately from men to get their views; contracting NGOs to reach out to women; skill building training for women)? | **Yes, partially**  The project planning and designing implies reconstruction of already existing facilities and systems, it takes into account the main measures for increasing energy efficiency, and while planning and designing the projects, all the rules of profession are being respected, so there is not much space for personal opinions. Where possible, expressed needs are taken in consideration, but it is not general practice. |
| Do planned activities involve both women and men? | **Yes**  Planned activities involve both women and men considering that both will benefit from the implementation of the project. |
| Are there additional activities to ensure that a gender perspective is made explicit (e.g. training in gender issues, additional research, etc.)? | **No**  The project is not currently ensuring that gender perspective is made explicit since the activities of the project are dealing mostly with infrastructure. |
| Indicators | Have indicators been developed to measure progress towards each objective? | **Yes**  The indicators are developed so they can measure progress toward each objective. |
| Do these indicators measure the gender aspects of each objective? | **Yes, where possible**  Some objective cannot have indicators that can measure the gender aspects, but the ones that can. |
| Are indicators gender disaggregated? | **Yes, where possible**  For some objectives the indicators are gender disaggregated. |
| Are targets set for sufficient participation by women and men? | **Yes** |
| Partners | Who will implement the planned intervention? | The contracting companies will implement the planned intervention. |
| Do these partners have gender mainstreaming (GM) capacity? | That is the aspect we cannot take into consideration in progress of engaging with the partners |
| Will both women and men from staff participate in implementation? | Both women and man are participating in planning and designing, but we cannot influence on number of women and men working in the institutions nor number of women and men working on the construction site. |
| Monitoring and evaluation | Does the M&E strategy include a gender perspective? | **Yes** |
| Is the M&E framework sex-disaggregated (baseline, monitoring, impact evaluation) with reporting requirements? | **Yes, where possible**  M&E framework needs to be updated and expanded to meet all recommendations from gender analysis. |
| Will it examine both technical (content) and organizational (process) aspects of the intervention? | **Yes, where possible**  M&E framework needs to be updated and expanded to meet all recommendations from gender analysis. |
| Risks | Have the greater Context of gender roles and relations within society been considered as a potential risk (i.e. stereotypes or structural barriers that may prevent full participation of one or the other gender)? | **Yes**  While planning the Project potential risks regarding the gender roles within the society have been considered. |
| Has the potential negative impact of the intervention been considered (e.g. potential increased burden on women or social isolation of men)? | **Yes**  The intervention conducted through the Project cannot cause negative impact. |
| Budgets | Has the need to provide gender training or to engage gender experts been factored into the budget? | In GED 1st phase of the project while preparing the budget the need for engaging gender experts was not taken into account. |
| Does the project explicitly allocate budget/resources for gender-related activities? | Since the results of the Project reflects the needs of booth, mand and women, the project does not explicitly allocate resources for gender-related activities. |
| Communication strategy | Does the project communications strategy for informing the public about the existence, progress and results of the project, include a gender perspective? | **Yes**  Communication strategy for informing the public about the existence, progress and results of the project, includes a gender perspective. |

# ANNEX V: TRAINING EVENTS

| **No** | **Name of the training** | **Date** | **Location** |
| --- | --- | --- | --- |
| 1 | Proengineer | 18.10.2018 | Tuzla |
| 2 | Proengineer | 19.10.2018 | Bijeljina |
| 3 | Proengineer | 25.10.2018 | Banja Luka |
| 4 | Proengineer | 26.10.2018 | Bihać |
| 5 | Proengineer | 01.11.2018 | Zenica |
| 6 | Proengineer | 02.11.2018 | Trebinje |
| 7 | Proengineer | 08.11.2018 | Međugorje |
| 8 | Proengineer | 09.11.2018 | Mostar |
| 9 | Proengineer | 15.11.2018 | Teslić |
| 10 | Proengineer | 16.11.2018 | Sarajevo |
| 11 | EMIS | 27.02.2018 | Sarajevo |
| 12 | EMIS | 23.04.2018 | Sarajevo |
| 13 | EMIS | 22.05.2018 | Sarajevo |
| 14 | EMIS | 05.06.2018 | Tuzla |
| 15 | EMIS | 18.10.2018 | Trebinje |
| 16 | EMIS | 29.10.2018 | Banja Luka |
| 17 | EMIS | 09.11.2018 | Višegrad |
| 18 | EMIS | 02.11.2018 | Trebinje |
| 19 | EMIS | 23.11.2018 | Pale |
| 20 | EMIS | 26.11.2018 | Teslić |
| 21 | EMIS | 13.12.2018 | Bijeljina |
| 22 | EMIS | 31.01.2019 | Sarajevo, UN house |
| 23 | EMIS | 08.02.2019 | Prijedor |
| 24 | EMIS | 11.02.2019 | Zenica |
| 25 | EMIS | 19.02.2019 | Banja Luka (Fod RS) |
| 26 | EMIS | 26.02.2019 | Tuzla |
| 27 | EMIS | 06.03.2019 | Travnik |
| 28 | EMIS | 14.03.2019 | Mostar |
| 29 | EMIS | 18.04.2019 | Pale |
| 30 | EMIS | 22.05.2019 | Sarajevo, UN house |
| 31 | EMIS | 26.03.2019 | Doboj |
| 32 | EMIS | 18.04.2019 | Mrkonjić Grad |
| 33 | EMIS | 28.05.2019 | Zvornik |
| 34 | EMIS | 29.05.2019 | Modriča |
| 35 | EMIS | 17.06.2019 | Tuzla |
| 36 | EMIS | 18.06.2019 | Bijeljina |
| 37 | EMIS | 18.06.2019 | Banja Luka |
| 38 | EMIS | 24.09.2019 | Mostar |
| 39 | EMIS | 25.09.2018 | Trebinje |
| 40 | EMIS | 11.10.2019 | Zenica |
| 41 | EMIS | 28.10.2019 | Livno |
| 42 | EMIS | 29.10.2019 | Bihać |
| 43 | EMIS | 15.11.2019 | Tuzla |
| 44 | EMIS | 20.11.2019 | Bihać |
| 45 | EMIS | 27.11.2019 | Šamac |
| 46 | EMIS | 19.12.2019 | Sarajevo |
| 47 | EMIS | 20.12.2019 | Doboj |
| 48 | EMIS | 24.12.2019 | Prijedor |
| 49 | EMIS | 08.01.2020 | Sarajevo (MoFTER) |
| 50 | EMIS | 31.01.2020. | Mrkonjić Grad |
| 51 | EMIS | 05.02.2020. | Travnik |
| 52 | EMIS | 06.02.2020 | Zenica |
| 53 | EMIS | 26.02.2020. | Sarajevo, UN house |
| 54 | EMIS | 10.04.2020 | Online (Sarajevo) |
| 55 | EMIS | 23.04.2020. | Online (Banja Luka) |
| 56 | EMIS | 24.04.2020 | Online (Doboj) |
| 57 | EMIS | 08.05.2020 | Online (Sarajevo) |
| 58 | EMIS | 08.05.2020. | Online (Sarajevo) |
| 59 | EMIS | 30.06.2020. | Online (Doboj) |
| 60 | EMIS | 06.07.2020 | Sarajevo - Služba za zaj. Poslove organa i tijela |
| 61 | EMIS | 13.07.2020 | Online (Banja Luka) |
| 62 | EMIS | 09.09.2020 | Sarajevo - Fond FBiH |
| 63 | EMIS | 09.10.2020 | Online - RS (mix grupa) |
| 64 | EMIS | 03.12.2020. | Online (Sarajevo) |
| 65 | EMIS | 04.12.2020. | Online (Sarajevo) |
| 66 | EMIS | 07.12.2020. | Online (Sarajevo) |
| 67 | EMIS | 29.01.2018. | Zenica |
| 68 | EMIS | 23.04.2018. | Sarajevo |
| 69 | EMIS | 12.12.2018. | Mostar |
| 70 | EE/Energy Management | 23.10.2020. | Sarajevo (online) |
| 71 | EE/Energy Management | 30.10.2020. | Sarajevo (online) |
| 72 | EE/Energy Management | 05.11.2020. | Sarajevo (online) |
| 73 | EE/Energy Management | 06.11.2020. | Sarajevo (online) |
| 74 | EE/Energy Management | 11.11.2020. | Sarajevo (online) |
| 75 | EE/Energy Management | 17.11.2020 | Sarajevo (online) |

# ANNEX VI: AWARENESS-RAISING EVENTS

* Developed web page [www.ged.ba](http://www.ged.ba) that is being used for promoting energy efficiency, benefits, tips, and advices on reducing energy efficiency, educating wider community on energy efficiency
* Two open air events for promotion of energy efficiency and tips on improving energy efficiency and reducing energy consumption in Sarajevo ([www.ged.ba](http://www.ged.ba))
* Open air event for promotion of energy efficiency and tips on improving energy efficiency and reducing energy consumption in Banja Luka ([www.ged.ba](http://www.ged.ba))
* Open air event for promotion of energy efficiency and tips on improving energy efficiency and reducing energy consumption in Bijeljina ([www.ged.ba](http://www.ged.ba))
* Open air event for promotion of energy efficiency and tips on improving energy efficiency and reducing energy consumption in Bihac([www.ged.ba](http://www.ged.ba))
* Open air event for promotion of energy efficiency and tips on improving energy efficiency and reducing energy consumption in Mostar ([www.ged.ba](http://www.ged.ba))
* Open air event for promotion of energy efficiency and tips on improving energy efficiency and reducing energy consumption in Zenica ([www.ged.ba](http://www.ged.ba))
* Six media conferences with the aim of portals promoting benefits of EE and tips on improving energy efficiency and reducing energy consumption
* Two workshops for energy managers and energy managers-coordinators in FBiH on establishing and developing energy management organization scheme (<https://www.ba.undp.org/content/bosnia_and_herzegovina/en/home/presscenter/articles/2019/GEDEnergijskiMenadzeri.html>)
* Workshop on establishment of Energy Management system and Energy Efficiency Information System in state level institutions in BiH (<https://www.ba.undp.org/content/bosnia_and_herzegovina/bs/home/presscenter/vijesti/2020/RadionicaEnergetskiMenadzment.html>)
* Two promotional visits to the retrofitted schools in Zavidovici and Music school Sarajevo
* Conference “Smart Growth for the New Climate Reality” attended by Crown Princess Victoria, Prince Daniel of Sweden, and Deputy Prime Minister of Sweden Isabella Lövin (<https://www.flickr.com/photos/undp_bosnia-herzegovina/albums/72157711728109578>; )
* Photo exhibition in Parliament of Bosnia and Herzegovina (<https://www.flickr.com/photos/undp_bosnia-herzegovina/49045064958/in/album-72157711728109578/>)
* Photo exhibition in Sarajevo City Center (<https://www.flickr.com/photos/undp_bosnia-herzegovina/albums/72157711726872093>)
* Environment day – painting mural „Green Man” (<https://www.youtube.com/watch?v=gCxuUg_hWIY&t=1s>; <https://www.ba.undp.org/content/bosnia_and_herzegovina/en/home/presscenter/articles/2020/GEDWED2020.html>)
* Media Conference – Energy efficiency in Bihac
* Public contest “Write a story win a prize” for journalists, bloggers and students on the environment and energy efficiency topics (<https://ged.ba/napisi-pricu/>)
* Digital campaign on 9 web portals promoting benefits of EE and tips on improving energy efficiency and reducing energy consumption in households, home, apartments, offices
* 7 photo stories on benefits of energy efficiency in retrofitted buildings ([https://ged.exposure.co/](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fged.exposure.co%2F&data=04%7C01%7Carnesa.borcak%40undp.org%7C07a12983147a4f52a30708d8cee20f73%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C637486817595116360%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=uVJWflKXyvD9%2FK5rjzPvbC0BqjPfsv4iyXbLNSTv%2BFg%3D&reserved=0))
* 6 video stories on benefits of energy efficiency in retrofitted buildings ([https://ged.ba/video-galerije/video-galerija/](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fged.ba%2Fvideo-galerije%2Fvideo-galerija%2F&data=04%7C01%7Carnesa.borcak%40undp.org%7C07a12983147a4f52a30708d8cee20f73%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C637486817595106405%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=bUN%2BXcx5%2FWFI7Glpw0%2ByiD%2FzJpigas0F%2B19QpqGUVRI%3D&reserved=0))
* Developed and distributed brochures about improving energy efficiency and reducing energy consumption in households, home, apartments, offices ([https://ged.ba/energetska-efikasnost/#savjeti-za-energetsku-efikasnost](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fged.ba%2Fenergetska-efikasnost%2F%23savjeti-za-energetsku-efikasnost&data=04%7C01%7Carnesa.borcak%40undp.org%7C07a12983147a4f52a30708d8cee20f73%7Cb3e5db5e2944483799f57488ace54319%7C0%7C0%7C637486817595126315%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=Xi7a03v39Gs6mktRCC3JrugUNI104ZnMtB3RoJQ6hu8%3D&reserved=0))
* Two outdoor campaigns promoting energy efficiency and tips on improving energy efficiency and reducing energy consumption in Sarajevo
* Two outdoor campaigns promoting energy efficiency and tips on improving energy efficiency reducing energy consumption in Mostar
* Two outdoor campaigns promoting energy efficiency and tips on improving energy efficiency and reducing energy consumption in Banja Luka

1. According to the Report “Regular Review of Energy Efficiency Strategies in Bosnia and Herzegovina” prepared under the obligations of the Energy Charter Treaty, gross total primary energy consumed per unit of GDP is 0.938 toe/USD 2000, which is 2.5 times the average of 27 EU countries and higher than almost any other country in the South-eastern Europe region. [↑](#footnote-ref-2)
2. Energy sector study in Bosnia and Herzegovina, 2008. [↑](#footnote-ref-3)
3. The Framework Energy Strategy for Bosnia and Herzegovina has proposed strategic priorities and guidelines for the field of energy efficiency in public buildings such as improvement of energy efficiency in the segment of public building through developing programmes for long-term renovation of buildings and preparing cost-optimal methodologies for all categories of buildings and reconstruction of central government buildings and public buildings, in accordance with the requirements of Article 5 of the Energy Efficiency Directive. [↑](#footnote-ref-4)
4. After the outbreak of the COVID-19 pandemic we witness rapid increasing in number of unemployed. The unemployment rate rose by 5.8 percent from March to July, as reported by the Bosnia and Herzegovina Statistics Agency. [↑](#footnote-ref-5)
5. Sources: Government of Republika Srpska, Government of the Federation of Bosnia and Herzegovina. [↑](#footnote-ref-6)
6. Source: Decision of the Council of Ministers of Bosnia and Herzegovina. [↑](#footnote-ref-7)
7. Criteria for evaluating development assistance: relevance, effectiveness, efficiency, sustainability and impact of development efforts. [↑](#footnote-ref-8)
8. <http://web.undp.org/evaluation/guideline/> [↑](#footnote-ref-9)
9. Conducted on the basis of interviews with project stakeholders and site visits, the review showed very positive results by the project. It concluded that the project had successfully initiated a transformation in the area of energy efficiency for public buildings and that it was on a strong path to achieve sustainability through further actions in the following years. [↑](#footnote-ref-10)
10. This diagram, presenting the project’s Theory of Change, was developed by the project team in the Project Document for GED III. [↑](#footnote-ref-11)
11. EMIS is the only available source of information and data about public buildings in Bosnia and Hercegovina, their actual energy consumption, GHG emissions and energy-related expenditures. [↑](#footnote-ref-12)
12. MoFTER is one of total nine state ministries in the Bosnia and Herzegovina. [↑](#footnote-ref-13)
13. The Environmental Protection Fund of FBiH derives its operating income mainly from fees charged to polluters and natural resources users, as well as from fees levied on motor vehicle registration and donor funds from international cooperation. The Fund is managed by a Steering Committee/Management Board and controlled by the Supervisory Board. The day-to-day operations are managed by the Director, who is appointed and by the Management Board with the approval of the Government of FBiH. The Fund is audited by auditors appointed by the Federation. [↑](#footnote-ref-14)
14. The Environmental Protection and Energy Efficiency Fund of RS currently has only one income source, which is an allocation of 10% of the feed-in tariff that is accorded to energy producers that utilize renewable energy sources. The Fund is also allocated 15 % of the water protection fees levied in RS on owners of motor vehicles, once this mechanism is enforced (which is expected beginning of 2015). Other potential sources of income are ‘polluter pays’ fees and fees for waste disposal as well as donor funds. The Fund is managed by the Steering Committee, which consists of seven members that are appointed by the Government of RS. The members are representatives of relevant ministries and authorities. The Director of the Fund is appointed by the Government of RS on the basis of a public competition. [↑](#footnote-ref-15)
15. Direct Implementation (DIM) is the modality whereby UNDP takes on the role of Implementing Partner. In DIM modality, UNDP has the technical and administrative capacity to assume the responsibility for mobilizing and applying effectively the required inputs in order to reach the expected outputs. UNDP assumes overall management responsibility and accountability for project implementation. Accordingly, UNDP must follow all policies and procedures established for its own operations. (link to full document [here](https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/FRM_Financial%20Management%20and%20Implementation%20Modality_Direct%20Implementation%20Modality.docx&action=default)). [↑](#footnote-ref-16)
16. This has been discussed in the Outcome Evaluation of the Environment and EE portfolio of UNDP Bosnia and Herzegovina. [↑](#footnote-ref-17)
17. UNDP-GEF Energy Efficiency Project in Croatia titled ‘Removing Barriers to Improving Energy Efficiency of the Residential and Service Sectors’. [↑](#footnote-ref-18)
18. “Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia”. [↑](#footnote-ref-19)
19. These workshops have involved a social environment in which stakeholders have communicated and exchanged stories they have experienced. [↑](#footnote-ref-20)
20. The exchange rate used for the BAM/USD conversion is 1.7. [↑](#footnote-ref-21)
21. The strategy was adopted by the Council of Ministers of Bosnia and Hercegovina on 29th August 2018. [↑](#footnote-ref-22)
22. To boost energy performance of buildings, the EU has established a legislative framework that includes a number of energy efficiency related directives. The EU Directive 2009/28/EC requirements on the promotion of the use of energy from renewable sources have been introduced into the EnC legislation through Decision 2012/04/MC-EnC of the EnC Ministerial Council. [↑](#footnote-ref-23)
23. To date Bosnia and Herzegovina has:

    Adopted the Climate Change Adaptation and Low Emission Development Strategy for BiH (2013),

    Adopted the Initial, Second and Third National Communication on Climate Change (2009, 2013 and 2016 respectively),

    Established the Designated National Authority for implementation of the Clean Development Mechanism in the Kyoto Protocol,

    Prepared the First and Second Biennial Update Reports (FBUR) of BiH under the UNFCCC (2014 and 2016 respectively),

    Submitted in October 2015 to the Conference of the Parties its Intended Nationally Determined Contributions (INDC) towards achieving the objective of the Convention as set out in its Article 2. [↑](#footnote-ref-24)
24. UNDP Country Programme Document 2015 – 2020. The project also partially continues into the 2021-2025 cycle. [↑](#footnote-ref-25)
25. United Nations Development Framework for Bosnia and Herzegovina 2015-2020. The project also partially continues into the 2021-2025 cycle. [↑](#footnote-ref-26)
26. For example, GED project results are presented on annual basis to the Energy Community Secretariat and are profiled in the official Energy Community Secretariat Annual Reports. [↑](#footnote-ref-27)
27. The rulebook defines the energy management system, the accompanying obligations and the role of institutions and persons, defines its structure, and conditions for appointing energy managers, administrators and advisers. It was expected that the rulebooks for Republika Srpska would be adopted in 2019, but that has not happened yet. [↑](#footnote-ref-28)
28. The rulebook defines the training programme for persons performing energy management activities, and the conditions for organizing the training, examination and licensing. [↑](#footnote-ref-29)
29. As there is no EE law at the state level, the implementation of energy management system is carried out through the “Decision on the establishment of the energy management system and the energy efficiency information system in state level institutions, as well as mandatory data entry and regular reporting”, adopted in June 2019. [↑](#footnote-ref-30)
30. MoFTER and the Service are key for the operationalization of the energy management system at the state level. [↑](#footnote-ref-31)
31. Among many duties, the energy manager-coordinator and energy managers are responsible for analyzing and defining the current state of energy efficiency, participation in the drafting of energy efficiency action and operational plans, assessment of priorities in the application of energy efficiency measures, planning of implementation of energy efficiency measures, introduction of criteria for reduction of greenhouse gas emissions, analysis of the feasibility of energy efficiency measures and planning financing mechanisms, management and use of Information System of Energy Efficiency (ISEE) for state-level buildings for the purpose of reporting, planning, monitoring and verification of energy and water savings. [↑](#footnote-ref-32)
32. As EU directives are expected to be enforced in BiH it is necessary that governments at all levels, municipalities, Energy Service Companies (ESCOs), public facilities, building owners, public utilities, small and medium enterprises, producers, distributors, installers, as well as engineers and professionals understand the policy and legislation of Nearly Zero Energy Buildings (NZEB), but also understand the needs of existing construction sections that need to be renovated in accordance with NZEB energy standards. [↑](#footnote-ref-33)
33. It is a unique database that combines energy consumption (kWh) and building characteristics (m2 of heated area, building type, number of beneficiaries). The map enables a comparison of energy or water consumption, as well as CO2 emissions over time for any given building, or group of buildings, which also facilitates the tracking of savings for buildings that have been retrofitted. The tool is also equipped with the spreadsheets which can be exported for analytical or other purposes. [↑](#footnote-ref-34)
34. Given that the Energy Management Information system is also used in the region, such as in Croatia and Serbia, there is interest in developing a common module that will meet all necessities and variables of these systems. [↑](#footnote-ref-35)
35. Articles 3, 4 and 5 and Annex I of the EPBD define the energy performance calculation methodology for cost-optimal levels. Cost-optimal levels of minimum energy performance for the public sector shall be calculated in accordance with the methodology framework to delegated regulation No. 244/2012 of Directive 2010/31/EU establishing a comparative methodology framework for calculating cost-optimal levels of minimum requirements for the energy performance of buildings and parts of buildings. The methodology framework sets out the rules for comparing energy efficiency measures including renewable energy sources and variants of the measures applied, and how the rules are applied to the reference building to define cost-optimal levels of minimum requirements on the energy performance of buildings. The most important part of the process of determining the cost-optimal levels of the building is about establishing standard measures (package of measures) to increase energy efficiency on each reference building. [↑](#footnote-ref-36)
36. The following relevant documents were used to perform the necessary analyses: (i) Preparation of climate data required for the calculation of heating/cooling of buildings in Bosnia and Herzegovina (GIZ, 2016); (ii) Typology of public buildings in Bosnia and Herzegovina (UNDP, 2017). [↑](#footnote-ref-37)
37. As the targets in the project’s results framework were framed in a cumulative fashion, the numbers in the table below include the baseline – therefore representing achievements for both phases of the GED project. For an understanding of the achievements of phase II alone, it is necessary to examine Table 10 and focus only on the 2018-2020 period. [↑](#footnote-ref-38)
38. It should be noted here that 30 public buildings have been retrofitted through a World Bank loan, but they don’t count towards the project’s results framework because they did not involve any loans from the environmental funds. [↑](#footnote-ref-39)
39. In the Federation, the EE Revolving Fund was established and operationalized in the period 2016-2018. It provided soft loans to small and medium enterprises and public authorities to co-finance EE projects. In Republika Srpska, an EE Revolving Fund was expected to be established in 2019, but has not been established yet. [↑](#footnote-ref-40)
40. UNDP/GED team has advised the environmental fund against the launching of the two calls in parallel. [↑](#footnote-ref-41)
41. This work has been ongoing with some international expertise secured through another UNDP project (Urban LED project). [↑](#footnote-ref-42)
42. As the targets in the project’s results framework were framed in a cumulative fashion, the numbers in the table below include the baseline – therefore representing achievements for both phases of the GED project. For an understanding of the achievements of phase II alone, it is necessary to examine Table 10 and focus only on the 2018-2020 period. [↑](#footnote-ref-43)
43. The difference in the total number of projects is due to additional projects that were implemented through GED I in period between the development of the Pro Doc and the actual beginning of the implementation of GED II [↑](#footnote-ref-44)
44. Bosnia and Herzegovina has 76 state government institutions located in 40 buildings. However, not all the buildings are owned by the state government. In total 26 buildings, occupied by approximately 60 institutions, are owned by state government institutions, with the remaining 14 rented. Therefore, GED II focused on the 26 buildings owned by the state government. [↑](#footnote-ref-45)
45. This figure does not imply unique persons since some/many of them could have engaged more than once. [↑](#footnote-ref-46)
46. Research group from the Faculty of Mechanical Engineering in Sarajevo is actively investigating the problem of air pollution through the following projects:

    Measurement of vertical profile of air pollution using drones up to 1000 meters above Sarajevo;

    Ground measurements with the network of calibrated high-resolution laser sensors;

    Computer simulations of air flow and distribution of air pollutants, with reference to the effect of tall buildings. [↑](#footnote-ref-47)
47. For the quantitative determination of air pollution parameters, procurement of the following equipment was necessary: (i) Calibration system for laser sensors (gravimetric measurements and reference optical particle sizer); (ii) SMPS mass spectrometer which can detect very small particles (of several nanometers); (iii) BC (Black Carbon) monitor; (iv) More advanced drone with additional sensors, such as mobile Black Carbon sensor and CO2. [↑](#footnote-ref-48)
48. The difference in the total number of projects is due to additional projects that were implemented through GED I in period between the development of the ProDoc and the actual beginning of the implementation of GED II. [↑](#footnote-ref-49)
49. The difference in the total number of projects is due to additional projects that were implemented through GED I in period between the development of the ProDoc and the actual beginning of the implementation of GED II. [↑](#footnote-ref-50)
50. The difference in the total number of projects is due to additional projects that were implemented through GED I in period between the development of the ProDoc and the actual beginning of the implementation of GED II. [↑](#footnote-ref-51)
51. Funded by the Global Environmental Facility, the Urban LED project facilitates the transformation of the market for low-carbon urban solutions by creating and expanding opportunities for businesses such as ESCOs and waste management companies to get involved in the provision of low-carbon services and products in cities. [↑](#footnote-ref-52)
52. The ISEE website can be found here: <http://www.iseefbih.ba/>. ISEE is a set of independent web application platforms and databases. EMIS is part of ISEE and will be used to monitor data on energy and water consumption, for control, analysis and reporting. [↑](#footnote-ref-53)
53. The EBRD is contributing a €8 million loan, while the EU is extending a €2 million grant for the refurbishment of 40 buildings in the Canton of Sarajevo. The investments will cover 29 schools and related facilities, 6 kindergartens, 3 student dormitories and 2 outpatient clinics. (<https://www.ebrd.com/news/2020/public-buildings-in-sarajevo-to-become-energy-efficient.html>). [↑](#footnote-ref-54)
54. KfW has committed a 19.5 million EUR grant for the refurbishment of 40 public buildings. This is their first activity of this kind in Bosnia and Herzegovina. Implementation has not started yet. [↑](#footnote-ref-55)
55. Study on Human Development and Gender Mainstreaming through Energy Efficiency Effects (July 2018). [↑](#footnote-ref-56)
56. In the Federation, the EE Revolving Fund was established in the period 2016-2018. It provided soft loans to small and medium enterprises and public authorities to co-finance EE projects. In Republika Srpska, an EE Revolving Fund was expected to be established in 2019, but has not been established yet. [↑](#footnote-ref-57)
57. The GED project has facilitated contacts with UNDP Serbia and the Agency for Transactions and Mediation of Real Estate (APN) from Croatia, who are also implementing EMIS in the respective countries, to agree on cooperation in the development of this module. [↑](#footnote-ref-58)
58. Energy Community acquis: <https://www.energy-community.org/legal/acquis.html> [↑](#footnote-ref-59)
59. Treaty establishing Energy Community: <https://www.energy-community.org/legal/treaty.html> [↑](#footnote-ref-60)
60. Sources: [Government of Republika Srpska](http://www.vladars.net/sr-SP-Cyrl/Vlada/media/vijesti/Pages/1.-vanredna-sjednica-Vlade.aspx), [Government of the Federation of Bosnia and Herzegovina](http://www.fbihvlada.gov.ba/bosanski/aktuelno_v2.php?akt_id=8417). [↑](#footnote-ref-61)
61. Source: [Decision of the Council of Ministers of Bosnia and Herzegovina](http://www.vijeceministara.gov.ba/home_right_docs/info/default.aspx?id=32615&langTag=bs-BA). [↑](#footnote-ref-62)
62. Template available at <http://web.undp.org/evaluation/guideline/documents/PDF/UNDP_Evaluation_Guidelines.pdf>, p. 25 [↑](#footnote-ref-63)
63. Evaluation Report Template available at <http://web.undp.org/evaluation/guideline/documents/PDF/UNDP_Evaluation_Guidelines.pdf>, p.49 [↑](#footnote-ref-64)