



United Nations Development Programme

Government of Serbia

**PIMS 4588 Removing Barriers to Promote and Support Energy
Management Systems in Municipalities throughout Serbia**

Final Terminal Evaluation (TE) Report

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BASIC REPORT INFORMATION

Title of UNDP supported GEF financed project: PIMS 4588 Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia

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GEF project ID#: 5518

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GEF Operational Focal Area/Strategic Program: Promote market transformation for energy efficiency in industry and the building sector

Executing Agency/Implementing Partner and other project partners: Ministry of Energy and Mining of the Republic of Serbia (lead partner)

TE members (international consultant): Mr. Manfred Stockmayer (international consultant), Mr. Dejan Stojadinovic (national consultant)

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ABBREVIATIONS

AWP	Annual Work Plan
CCIS	Serbian Chamber of Commerce and Industry
EPBD	Energy Performance of Buildings Directive
CEB	Council of Europe Development Bank
CO ₂	Carbon Dioxide
CTA	Chief Technical Advisor
EBRD	European Bank for Reconstruction and Development
EE	Energy Efficiency
EMIS	Energy Management Information Systems
EMS	Energy Management Systems
ESCO	Energy Service Company
EUR	Euro
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GWh	Gigawatt Hours
I	Interview
ISS	Institute for Standardization of Serbia
JICA	Japan International Co-operation Agency
KfW	Kreditanstalt für Wiederaufbau
kW	Kilowatt
LR	Literature Review
M&E	Monitoring and Evaluation
MEEMP	Municipal Energy Efficiency and Management Project
MEGLIP	Municipal Environmental Grant-Loan Investment Programme
MoME	Ministry of Mining and Energy
MTR	Mid-Term Review
MVP	Monitoring and verification plan
MW	Megawatt
MWh	Megawatt hour
NIM	National Implementation Modality
NGO	Non-governmental organization
NPD	National Project Director
NZEB	Near Zero Energy Buildings
PIF	Project Identification Form
PIR	Project Implementation Review
PIMS	Project Information Management System
PMU	Project Management Unit
Prodoc	UNDP Project Document for “Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia”
Project	The project under review: “Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia”
PPG	Project Preparation Grant
PUC	Public Utility Company
RTA	Regional Technical Advisor
SCTM	Standard Conference of Towns and Municipalities
SECO	Swiss State Secretariat for Economic Affairs
SMART	Specific, Measurable, Achievable, Relevant, Time-bound
tCO ₂ eq	Tons of CO ₂ equivalent
TE	Terminal Evaluation
TJ	Terra Joule
ToR	Terms of Reference

UNDP United Nations Development Programme
US\$ US Dollar

1. EXECUTIVE SUMMARY

1.1 Project Information Table

Project Title	Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia (EMIS)		
UNDP Project ID (PIMS #):	4588	PIF Approval Date:	05.02.2014
GEF Project ID (PMIS #):	5518	CEO Endorsement Date:	23.06.2015
ATLAS Business Unit, Award # Proj. ID:	00087720, 00094643	Project Document (ProDoc) Signature Date (date project began):	21.10.2015
Country(ies):	Serbia	Date project manager hired:	October 2015
Region:	South East Europe	Inception Workshop date:	14.12.2015
Focal Area:	Climate Change	Midterm Review completion date:	June 2018
GEF Focal Area Strategic Objective:	SP-2: Promote market transformation for energy efficiency in industry and the building sector	Planned closing date:	31.10.2020
Trust Fund [indicate GEF TF, LDCF, SCCF, NPIF]:	GEF	If revised, proposed op. closing date:	31.01.2021
Executing Agency/ Implementing Partner:	Ministry of Energy and Mining (lead partner) of the Republic of Serbia		
Other execution partners:			
Project Financing	at CEO endorsement (US\$)	at Terminal Evaluation (US\$)*	
[1] GEF financing:	US\$ 2,300,000	US\$ 2,300,000	
[2] UNDP contribution:	US\$ 500,000	US\$ 500,000	
[3] Government:	US\$ 5,600,000 cash US\$ 1,500,000 in-kind contributions	US\$ 8,600,423 cash US\$ 1,500,000 in-kind contributions	
[4] Other partners:	US\$ 11,600,000 cash US\$ 400,000 in-kind contributions	US\$ 6,550,160 cash US\$ 500,000 in-kind contributions	
[5] Total co-financing [2 + 3+ 4]:	US\$ 19,600,000	US\$ 16,653,578	
PROJECT TOTAL COSTS [1 + 5]	US\$ 21,900,000	US\$ 18,953,578	

1.2 Project Description

The objective of this GEF-financed project was to introduce and support the implementation of municipal Energy Management Systems (EMS), including Energy Management Information Systems (EMIS), throughout Republic of Serbia to increase the EE investments in public buildings and municipal services and to facilitate their more energy efficient operation in general. The project target by the end of the project is to have at least 30 Serbian municipalities to formally adopt and start the implementation of EMS and EMIS. The overall project targets were as follows:

- Achieve energy savings of at least 26 GWh (94 TJ) per year or 390 GWh (1,400 TJ) over the default lifetime of 15 years from the investments and other measures facilitated by the adoption and implementation of EMS and EMIS in at least 30 Serbian municipalities
- Realize a direct GHG reduction potential of 10 ktons CO_{2eq} per year or of 150 ktons CO_{2eq} over the default lifetime of 15 years of the investments and other measures undertaken
- Leverage at least US\$ 15 million for new EE investments by successful introduction of EMS and EMIS in Serbian municipalities

A project strategy was defined by a number of outputs that are clustered by outcomes, which together will achieve the project objective and overcome the barriers identified. These outcomes are:

- Outcome 1: An enabling legislative and regulatory framework to support adoption and effective implementation of municipal energy management systems and related energy efficiency measures
- Outcome 2: Central and municipal EE support units are established and operational and their capacity is built to establish energy management and information systems at the municipal level
- Outcome 3: At least 10 projects demonstrating the use of EMS and EMIS for identifying, prioritizing and leveraging financing for municipal EE investments and other related EE measures are successfully implemented with reported results for their first year of operation.
- Outcome 4: Municipal Energy-Efficiency Charter signed by over 80% of all municipalities in Republic of Serbia, enhanced public awareness and improved local capacity to implement and manage investments in energy efficiency

The Serbian EMIS Project was implemented and overseen by UNDP, the Executing Agency was the Ministry of Mining and Energy (MoME). Day-to-day management of the Project was carried out by a Project Management Unit (PMU) that was independent of but answerable to the Executing Agency (MoME) and both supported and overseen by the GEF Implementing Agency (UNDP Serbia). A Project Board has been established, which consists of Ministry of Mining and Energy, UNDP Serbia and the PMU.

1.3 Evaluation Rating Table

Specific ratings as per the terms of reference for the evaluation are summarized below:

Table 1: Evaluation Ratings Summary

Evaluation Ratings:			
1. Monitoring and Evaluation	rating	2. IA& EA Execution	rating
M&E design at entry	HS	Quality of UNDP Implementation	S
M&E Plan Implementation	S	Quality of Execution - Executing Agency	HS
Overall quality of M&E	S	Overall quality of Implementation / Execution	S
3. Assessment of Outcomes	rating	4. Sustainability	rating
Relevance	R	Financial resources:	L
Effectiveness	S	Socio-political:	L
Efficiency	S	Institutional framework and governance:	L
Overall Project Outcome Rating	S	Environmental:	L
		Overall likelihood of sustainability:	L

1.4 Summary of conclusions, recommendations and lessons learnt

The Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia (EMIS) Project has managed to generate energy savings of 1,310 TJ and CO₂ emission reductions of 123,379 tons, calculated over 15 years of lifetime of the measures implemented in a total of 8 funding calls. Total investment into energy efficiency in municipal buildings during the lifetime of the project was US\$ 15.0 million.

The introduction of energy management and EMIS at local self-governments has led to a total of 55 municipalities and cities starting the implementation of EMS and EMIS during the course of the project. The EMIS software now includes information on more than 9,400 buildings and 9,000 points of street lighting, thereby giving decision makers and energy managers in towns and municipalities valuable information about energy consumption and CO₂ emissions in their buildings. During the course of the project 137 out of 173 municipalities have signed the Energy Charter (which is almost 80% of all Serbian municipalities) and 125 persons received training for energy management in municipalities.

The Project Team identified further opportunities for renovating public buildings during the course of the Project. The elaboration of an investment study for energy efficiency renovation of 28 large public buildings of the central government was supported, which led to a EUR 40 million loan signed between the Government of Serbia and the Council of Europe Development Bank (CEB). Additionally, a concept note for the Green Climate Fund (GCF) has been prepared for financing the renovation of government heritage and public buildings with the aim of reaching Near Zero Energy Buildings (NZEB) status with the renovations of these buildings.

A detailed analysis of all findings of the Terminal Evaluation is included in Chapter 4, with a more extensive summary in section 5.2.

There are a number of corrective actions to be suggested based on the experience and lessons learnt of the Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia Project for future projects. These are as follows:

- For future project designs a thorough analysis of the financial performance of different energy efficiency measures should be carried out. Based on this analysis, maximum grant/subsidy levels should be defined before project start. The ProDoc required a maximum GEF contribution of 20% grant funding, but allowed the combination of GEF grant funding with other grant funding without defining an upper limit. In the end, the majority of projects received grant funding between 65% to 70% without any analysis of the financial performance of the energy efficiency measures included in the applications.
- Private sector approaches such as ESCOs in the case of energy efficiency should play a stronger role in project design, thereby supporting transformational change. Grant support will still be necessary for certain activities in the future, however, the target of market-based solutions involving private sector should be seen as a key driver for securing sustainability and replicability. These approaches should play a more prominent role in project design.
- Assessment of financial viability, independent evaluation on funding level required
- The Project had a strong focus on implementing the EMIS software in municipalities and providing training mostly on data collection and data entry as well as training energy managers. Interviews with various energy managers in municipalities led to the conclusion that a coaching support would have been helpful for the majority of energy managers. Going through the training is one thing, applying the know-how acquired in reality is another thing.

Support from experienced energy managers in form of coaching could have been helpful in further improving the performance of energy managers.

- The ProDoc has focused strongly on energy managers as the key addressees for energy management activities. Project implementation showed that decision makers and end users also play an important role in the implementation of energy management systems and specific training and capacity building needs to be provided to these groups. Also, reporting functions in software should be able to support the different information needs of these different groups.
- In the project design a help desk was mentioned, but its importance has been underestimated. Implementing a software system with a large number of municipalities leads to numerous questions on various details. Providing efficient support in answering these questions and solving issues is an important factor in securing an improved data quality in the software.
- Implementing a project with that many stakeholders (in the end more than 50 municipalities participated) requires extensive capacity plus excellent know-how within the PMU. Sufficient staffing is required to handle that work load and to allow sufficient time to tackle strategic issues (e.g. financial viability of energy efficiency measures, suggestions for moving from a heavily grant supported system towards a more market-oriented support system, etc.).
- The ProDoc was not clear on the methodology of measuring actual savings in energy consumption and GHG emissions. The requirement to generate 'one-year verifiable monitoring data' was included, but no methodology on how to collect and analyze data was mentioned. Further clarity and guidance at project start on how to monitor energy savings and GHG emission reductions would be helpful, especially taking into account potential differences between theoretical calculations and actual data monitored.
- For energy efficiency projects it is recommended to add an additional component/activity looking specifically at differences between theoretical calculations and actual results based on monitoring with the aim of developing a better model on projecting savings. This will be key for ESCO arrangements, where contracts are based on theoretical calculations.
- The Serbian EMIS project has successfully proven that a regional approach to solutions can be very successful. The Project helped to further develop the EMIS software and contributed towards further dissemination of the program in the region. This has a positive impact on the sustainability of activities in one country as well as the replicability in the region.
- Project design, especially the Project Results Framework and the M&E system should include interim targets and milestones, as these are helping project management in checking progress and taking steps of adaptive management, if necessary.

There are a number of actions, which should be followed up to achieve sustainable benefits from the Project (for full version of recommendations, please see section 5.4):

- During the 5 years of the Project, the Project Team has gained extensive experience in energy management of public buildings and the application of the EMIS software. This experience is to a certain extent reflected in all materials and information prepared under the EMIS project, however, a comprehensive lessons learnt study is missing. This should be prepared by the Project Team within the time left until the termination of the Project.
- The handover protocol to transfer EMIS from UNDP has been prepared as a draft and was agreed upon with the former NDP. The protocol needs to be re-discussed with the MoME and finalized before termination of the Project. This activity is to be led by the Project Team.
- The Project has seen a number of funding calls with high levels of grant support. The standard grant level in budgetary fund calls was a 70% contribution, this could go up to 100% for financially weak municipalities (there is an exception on street lighting, which is eligible for 20% grant funding). There is no evidence that analyses were carried out to investigate the funding levels required for energy efficiency investments in municipal public buildings,

depending on the type of measures carried out. This is a shortcoming and should be considered in future activities both by the MoME and UNDP.

- Different energy efficiency measures have different payback periods. Putting all measures into one basket and applying a 70% grant funding is leading to missed opportunities, as measures with a better financial viability will receive higher funding levels than required. This leads to non-optimal spending of public funds, which could be used to finance additional measures. Also, providing grant funding for measures close to financial viability reduces the potential for private sector (through ESCOs for example) to pick up these opportunities.
- Stakeholders provided feedback that extremely high grant funding levels (up to 100%) are counter-productive for a number of reasons, such as little motivation to optimize investments into building refurbishment, increasing reluctance of applicants to accept lower grant funding levels, or private sector participation (e.g. through ESCOs) being crowded out. This should be considered by the Government of Serbia in future support schemes. High grant funding levels (percentage of grant funding to be decided) should only be given to municipalities in a difficult financial situation.
- More than 30 municipalities have developed municipal EE plans, however, due to municipal elections in 2020, only a small number of plans were officially adopted. Further support shall be given to municipalities to proceed with the adoption. As time within the remaining lifetime of the project will be too short for the Project Team to carry out this role, this additional support should be managed by the MoME in cooperation with the SCTM.
- The Help Desk has been an extremely important support to municipalities in taking their first steps with the EMIS software. As the EMIS software should be applied in more municipalities, it is key that the Help Desk is being sustained. To support the sustainability of the Help Desk, an MoU has been signed between the MoME and the Faculty of Mechanical Engineering aiming at continuing the practice of students being assigned as interns to the Help Desk. To further increase the sustainability, it is recommended to assign a person of MoME staff with the responsibility of managing the Help Desk. This would specifically include the organization of trainings for junior interns and ensuring that information and experience gained by senior interns is kept within the Help Desk team.
- The activities of UNDP and the MoME to expand energy management and the application of the EMIS software to other public buildings should be continued and even intensified. The experience gained in the Project is of key importance to propose and structure support schemes for the rehabilitation of other public buildings. The loan agreement signed between the Government of Serbia and the CEB is a first success, the planned EMIS II project and the GCF application are important activities to apply lessons learnt of the EMIS Project.
- The development of the EMIS software as a tool for energy management in public buildings in the region is a very special success story. The close cooperation of UNDP country offices in the region, where all partners are contributing towards the improvement of the software, is unique, should be maintained and – if possible – even extended. The continuous improvement mechanism with cost sharing between different stakeholders is leading to a much better result than if one country would proceed with developing a software solution. The further application of the EMIS software in other countries in the region should be pursued by UNDP.
- The EMIS software and energy management in general have proven as very effective tools for municipalities to manage their energy consumption and identify improvements within their building stock. Currently only municipalities over 20,000 inhabitants are obliged to introduce an energy management system. It is suggested that this limit is gradually reduced with a medium term target of all municipalities in Serbia applying energy management. When doing this, the limited capacity of smaller municipalities needs to be taken into consideration. Also for smaller

municipalities, the EMIS software is an easy first step to collect data on their public buildings and is an excellent first step towards energy management.

2. INTRODUCTION

2.1 Purpose of the evaluation

The “Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia (EMIS)” project (PIMS #4588) was signed in October 2015, had an original closing date of 31 August 2020 and a revised closing date of 31 October 2020 (due to signing of the Project Document in October 2015). Due to COVID-19, the Project Board requested a 3-months no-cost extension and the Project will now close on 31 January 2021. The project has been designed to introduce and support the implementation of municipal Energy Management Systems (EMS), including Energy Management Information Systems (EMIS), throughout Serbia, to increase the energy efficiency investments in public buildings and municipal services and to facilitate their more energy efficient operation in general.

The strategy is built around four outcomes:

- Outcome 1: An enabling legislative and regulatory framework to support adoption and effective implementation of municipal energy management systems and related energy efficiency measures;
- Outcome 2: Central and municipal EE support units are established and operational and their capacity is built to establish energy management and information systems at the municipal level;
- Outcome 3: At least 10 projects demonstrating the use of EMS and EMIS for identifying, prioritizing and leveraging financing for municipal EE investments and other related EE measures are successfully implemented with reported results for their first year of operation;
- Outcome 4: Municipal Energy-Efficiency Charter signed by over 80% of all municipalities in Republic of Serbia, enhanced public awareness and improved local capacity to implement and manage investments in energy efficiency.

In accordance with UNDP and GEF requirements, the project is required to undertake a Terminal Evaluation (TE) now at the end of its project lifetime. The objectives of the TE are to assess the achievement of project results, to assess the extent to which the project has successfully carried out adaptive management following the mid-term review, to promote accountability and transparency, to provide feedback on issues that are recurrent across the UNDP portfolio and need attention, to contribute to the overall assessment of results in achieving GEF strategic objectives aimed at global environmental benefits and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of future UNDP programming.

2.2 Scope and Methodology

The TE was undertaken in line and accordance with the updated 2020 guidance provided in “UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects”. In terms of scope, the TE covered all aspects of the development and implementation of the Project, from the preparation of the PIF up till and including the Terminal Evaluation Mission (with most interviews being held virtually) and included inputs to activities, to outputs, outcomes and impacts.

The rating scale applied in this project is consistent with the UNDP Guidance for Conducting Terminal Evaluations of UNDP supported, GEF-financed projects, and is summarized in the table below.

Table 2: Rating Scales

<i>Ratings for Outcomes, Effectiveness, Efficiency, M&E, I&E Execution</i> 6: Highly Satisfactory (HS): no shortcomings 5: Satisfactory (S): minor shortcomings 4: Moderately Satisfactory (MS) 3. Moderately Unsatisfactory (MU): significant shortcomings 2. Unsatisfactory (U): major problems 1. Highly Unsatisfactory (HU): severe problems	<i>Sustainability ratings:</i> 4. Likely (L): negligible risks to sustainability 3. Moderately Likely (ML): moderate risks 2. Moderately Unlikely (MU): significant risks 1. Unlikely (U): severe risks	<i>Relevance ratings</i> 2. Relevant (R) 1. Not relevant (NR) <i>Impact Ratings:</i> 3. Significant (S) 2. Minimal (M) 1. Negligible (N)
<i>Additional ratings where relevant: Not Applicable (N/A), Unable to Assess (U/A)</i>		

2.3 Structure of the Terminal Evaluation Report

The structure of the evaluation report follows the “Evaluation Report Outline” presented in Annex F of the ToR of the assignment with some minor modifications. The Executive Summary is providing a quick overview on the main project results, ratings, other observations and recommendations for further work.

3. PROJECT DESCRIPTION AND DEVELOPMENT CONTEXT

3.1 Project start and duration

The Project Document was signed 21 October 2015 and the Project had an original closing date of 31 October 2020. The LPAC meeting was held on 16 July 2015, the LOA was signed on 22 October 2015. Due to the COVID-19 pandemic, the project closing date was changed to 31 January 2021.

3.2 Problems that the project sought to address

The objective of this GEF-financed project was to introduce and support the implementation of municipal Energy Management Systems (EMS), including Energy Management Information Systems (EMIS), throughout Republic of Serbia to increase the EE investments in public buildings and municipal services and to facilitate their more energy efficient operation in general. The project target by the end of the project is to have at least 30 Serbian municipalities to formally adopt and start the implementation of EMS and EMIS. The overall project targets were as follows:

- Achieve energy savings of at least 26 GWh (94 TJ) per year or 390 GWh (1,400 TJ) over the default lifetime of 15 years from the investments and other measures facilitated by the adoption and implementation of EMS and EMIS in at least 30 Serbian municipalities
- Realize a direct GHG reduction potential of 10 ktons CO_{2eq} per year or of 150 ktons CO_{2eq} over the default lifetime of 15 years of the investments and other measures undertaken
- Leverage at least US\$ 15 million for new EE investments by successful introduction of EMS and EMIS in Serbian municipalities

The ProDoc identified a number of barrier which the Project sought to overcome:

- Legal and Regulatory Barriers: The new Law on Efficient Use of Energy creates a national energy-efficiency programme but does not go into detail about how this programme will be created and how it will be operationalized.
- Information and Data Barriers: Lack of data concerning public sector energy consumption and losses, thereby making it more difficult to identify and justify the priority EE measures (and investments) to be undertaken.
- Institutional Barriers: Lack of continuity, clarity and co-ordination of the institutional responsibilities in improving energy efficiency of the municipal energy use and supply with institutional responsibilities split between various agencies.
- Awareness, Knowledge and Capacity Barriers: Lack of awareness, knowledge and capacity among municipal staff (incl. PUCs) on the initiation and implementation of EMS, EMIS, and related follow-up EE measures for municipal energy use and supply.
- Financial Barriers: Lack of public funding and inadequate access to private sector funding to finance municipal EE investments.

A project strategy was defined by a number of outputs that are clustered by outcomes, which together will achieve the project objective and overcome the barriers identified. These outcomes are:

- Outcome 1: An enabling legislative and regulatory framework to support adoption and effective implementation of municipal energy management systems and related energy efficiency measures
- Outcome 2: Central and municipal EE support units are established and operational and their capacity is built to establish energy management and information systems at the municipal level

- Outcome 3: At least 10 projects demonstrating the use of EMS and EMIS for identifying, prioritizing and leveraging financing for municipal EE investments and other related EE measures are successfully implemented with reported results for their first year of operation.
- Outcome 4: Municipal Energy-Efficiency Charter signed by over 80% of all municipalities in Republic of Serbia, enhanced public awareness and improved local capacity to implement and manage investments in energy efficiency

3.3 Immediate and development objectives of the project

The aim of the Project was to promote greater investment in energy efficiency in public buildings and services in the municipal sector in Republic of Serbia through introduction of Energy Management Systems (EMS), including Energy Management Information Systems (EMIS) throughout Serbia. The immediate objectives of the Project were to carry out at least 10 demonstration projects, have at least 80% of all Serbian municipalities signed the Energy Charter, generate energy savings of at least 1,400 TJ and GHG emission reductions of 150 ktons over the default lifetime of 15 years from investments and other measures facilitated by the Project.

3.4 Main stakeholders

The ProDoc included a long list of relevant stakeholders, differentiated into primary, secondary, tertiary and other stakeholders. From these stakeholders, the Project has successfully engaged intensively with the following stakeholders:

- The Ministry of Mining and Energy
- Various local self-governments
- Serbian Chamber of Commerce and Industry (CCIS)
- Standing Conference of Towns and Municipalities (SCTM)
- The Institute for Standardization of Serbia (ISS)

The list of stakeholders hasn't changed between project preparation and implementation phase. Minor changes were made in the cooperation, as the Ministry of Education and the Standing Conference of Towns and Municipalities (SCTM) were not part of the Project Board as planned.

3.5 Expected Results

At project inception, the expected results were as follows:

- Outcome 1: An enabling legislative and regulatory framework to support adoption and effective implementation of municipal energy management systems and related energy efficiency measures
 - Output 1.1: Review of the remaining legal and regulatory barriers to effectively promote energy efficiency in Serbian municipalities addressing areas such as minimum energy performance standards, tariff setting for public utility services, laws and regulations guiding public procurement, allocation of eventual financial savings from EE measures implemented in public entities etc.
 - Output 1.2: By building on the conclusions of output 1.1, draft recommendations for the required legal and regulatory changes to better promote energy efficiency in Serbian municipalities.
 - Output 1.3: An updated assessment of the level of enforcement of the adopted laws and regulations, identified barriers and recommendations to remove those barriers

- Output 1.4: Developing and facilitating the adoption of voluntary norms and minimum energy performance and environment standards for public administration and services with links to “green public procurement”, “green office” and “smart city” initiatives exceeding the minimum legal and regulatory requirements.
- Outcome 2: Central and municipal EE support units are established and operational and their capacity is built to establish energy management and information systems at the municipal level
 - Output 2.1: Central Energy Management Support Unit (+ a hotline, as applicable) established within the Ministry of Mining and Energy and its capacity and competence built.
 - Output 2.2: A municipal EE/EMS website hosted by MoME or another entity such as SCTM with compiled, consolidated and regularly updated information, experiences, available training materials and lessons learnt from implementing municipal EMS and EMIS both in Republic of Serbia and abroad.
 - Output 2.3: Upgraded EMIS software to include also public utility services (street lighting, district heating, sanitary water supply and public transport) in addition to public buildings and to facilitate interchange of data with other databases.
 - Output 2.4: Awareness raising, public outreach and direct consultations with municipal decision makers to present EMS and EMIS and their benefits to municipalities + awareness raising of the general public on EE by building on the existing materials and co-operation with other ongoing EE related initiatives in Republic of Serbia.
 - Output 2.5: Concluded co-operation agreements with at least 30 municipalities to adopt EMS and EMIS and to establish municipal energy management offices/ support units.
 - Output 2.6: EMS and EMIS formally taken into use with appointed energy managers and energy management offices / support units established in at least 30 municipalities, followed up by related on-the-job training and capacity building.
 - Output 2.7: In co-operation with the SCTM, establish a network of energy managers, together with the organisation of related joint training and networking events
 - Output 2.8: Completion and filling of the EMIS database with the agreed data from all the co-operating municipalities, including installation of new meters and conducting energy audits, when necessary.
 - Output 2.9: Analysis of the data obtained and defining the indicators and benchmark values to be included into EMIS, on the basis of which the municipalities can assess their energy performance
 - Output 2.10: Completed municipal EE strategies and action plans published by at least 30 municipalities with clearly defined EE targets
 - Output 2.11: Completed and implemented public visibility plan and actions to present the EE strategies and action plans and the results achieved to the general public
 - Output 2.12: Monthly/annual energy monitoring reports published by at least 30 municipalities
- Outcome 3: At least 10 projects demonstrating the use of EMS and EMIS for identifying, prioritizing and leveraging financing for municipal EE investments and other related EE measures are successfully implemented with reported results for their first year of operation.
 - Output 3.1: At least 10 demonstration projects from different municipalities, selected based on a public call for proposals.
 - Output 3.2: Technical assistance for completing the design, financial structuring and implementation of the demonstration projects
 - Output 3.3: Documenting and publishing of the demonstration project results and lessons learnt, including their monitored and verified energy savings and GHG emission reduction impact

- Output 3.4: Supporting the cost-benefit analysis, preparation of initial investment proposals and structuring financing for EE and RE projects in other municipalities
- Outcome 4: Municipal Energy-Efficiency Charter signed by over 80% of all municipalities in Republic of Serbia, enhanced public awareness and improved local capacity to implement and manage investments in energy efficiency
 - Output 4.1: By building on results, experiences and lessons learnt from introducing EMIS in the first 30 municipalities in Republic of Serbia as well as in other countries, preparing and delivering a “road show” for presenting to and expanding the adoption of EMS and EMIS at a coherent, high quality level also in other Serbian municipalities
 - Output 4.2: Municipal Energy Efficiency Charter developed and signed by at least 80% of all Serbian municipalities by building on the Croatian model
 - Output 4.3: Updated curricula with related training materials on the state of the art EE technologies and approaches developed for at least 3 different professional fields (electricians, plumbers, construction workers) and taken into use in at least 10 different professional/ vocational schools
 - Output 4.4: Regularly updated web-based energy managers’ “handbook” providing guidance on implementing EMS and EMIS typical no or low cost EE improvements of public buildings and services, project financing, design and implementation of public awareness raising campaigns, green public procurement and criteria for assessing the quality of the services received, such as energy audits.
 - Output 4.5: Public outreach campaigns, events and facilities (such as EE info offices and stands), including possibilities for the potential clients (including both private and public sector) and suppliers of EE equipment and services to meet.
 - Output 4.6: Updated project exit strategy
 - Output 4.7: End-of-the project workshop

During the MTR, some of the outputs were modified. Output 4.3 was modified as the update of curricula was considered as unrealistic. As a replacement, several trainings courses were developed by the Faculty of Mechanical Engineering and the Chamber of Commerce. For Output 4.5 it was concluded that setting up EE info offices and stands across Serbia requires resources beyond the means of the project. As a replacement, guidelines for energy managers on public communication and outreach were developed.

End of 2019, an additional “Outcome 5: Scaling up energy efficiency investments in public buildings” was defined. The MoME and UNDP signed an agreement which provided additional funding of US\$ 48,000 to prepare a mid-term national plan for the preparation of public buildings in Serbia.

4. FINDINGS

4.1 Project Design/Formulation

Analysis of LFA/Results Framework (Project logic /strategy; Indicators)

Project logic/strategy and indicators are discussed below in chapter “Feedback from M&E activities used for adaptive management”.

Assumptions and risks

The project design was based on a few key assumptions. First and foremost, continuing political support for improving the regulatory framework and provide the funding required for the preparation, implementation and operation of EMIS and related EE investments was seen as a key requirement. On a national level, political support was assumed for further developing the regulatory framework, mainly by providing support to secondary legislation supporting the Law on the Efficient Energy Use. On the municipal level, political will and commitment was assumed securing the required financial resources for financing and co-financing work with EMIS and especially investments into EE technologies. On the municipal level, the availability of adequate local capacity at the municipal level to effectively implement EMS and EMIS was another key assumption, the same was also relevant (but to a lesser extent) on the central government.

The Project identified a number of risks which were described in detail in the Offline Risk Log of the Project Document:

- Political risks (less priority on energy efficiency, lack of enforcement of EMS and EMIS in municipalities) – risk level low/2
- Financial risks (lack of financial resources in municipalities) – risk level medium/3
- Technological risks (failure of technologies) – risk level low/2
- Environmental risks (temperature increase, waste) – risk level medium/3
- Organisational risks (overlap of activities with other donors, lack of co-ordination and cooperation, lack of capacity and human resources, project duration too short) – risk level medium/3

The issues the Project faced during its implementation showed that the project risks were properly identified in the ProDoc and well managed during project implementation. The biggest risk in implementation was the lack of financial resources in municipalities. Although all funding rounds attracted a good number of projects, there were indicators confirming this risk:

- The second call in 2016, which included GEF funding, needed to deviate from the original funding rules and increase GEF co-funding from 20% up to 45%. The reason given for that deviation was the lack of co-financing from the budgetary funds as well as insufficient funding from municipalities to close the gap. For further details, please see chapter 5.2, sub-section on adaptive management.
- From all funding calls, the KfW MEGLIP call received the least interest with less than US\$ 1 million investments facilitated in this call (the average of all other calls was more than US\$ 2 million). This is due to the high co-financing requirement from municipalities of 80% to 85%.

Lessons from other relevant projects incorporated into project design

The project took into account a number of relevant projects when developing the project design. The most relevant projects were:

- Initial work on energy management in municipalities goes back to Norwegian bilateral assistance, which implemented specific activities in several phases between 2002 and 2009. Work included advice to the MoME, providing support to energy efficiency centers and training representatives of municipalities.
- GIZ (at that time named GTZ) provided assistance to the Republic of Serbia through the projects “Planning for Sustainable Municipal Investment in the Area of Rational Use of Energy” as well as “Strengthening of the Local Self-Government”, thereby continuing the activities of the Norwegian bilateral assistance.
- UNDP/GEF Croatia project “Removing Barriers to Energy Efficiency in the Residential and Service Sectors”: this project was finalized in 2011 and focused on the adoption of municipal energy management systems (EMS) and energy management information systems (EMIS) for municipalities in Croatia. The project was finalized as highly successful initiative and together with complementary efforts and financing by the Government of Croatia did manage to facilitate the adoption of EMIS by over 100 Croatian municipalities and counties, together with the appointment of energy managers and establishment of municipal energy efficiency offices. Within the project, the EMIS software was developed, which is being applied now in Serbia, Bosnia and Hercegovina and Moldova. Key observations and lessons learnt from the Croatian EMIS project were described in Annex 8.6 of the ProDoc, thereby confirming that lessons learnt were taken into consideration in project design.
- JICA (Japan International Co-operation Agency) has been active in Republic of Serbia in supporting the introduction of energy management systems through two particular projects. The first project implemented in 2009-2011 in the frame of JICA Technical Cooperation for Development Planning was a study to recommend necessary legal framework and action plan for the introduction of the energy management systems in Republic of Serbia, which recommendations were later incorporated into the Law on Efficient Use of Energy, enacted in March 2013. The second project "Project for Assistance of Enhancement of Energy Management System in Energy Consumption Sectors in the Republic of Serbia" has been jointly implemented by MoME and JICA between 2014 and 2018. The project aimed at introducing and implementing an Energy Management System (EMS) stipulated in the Law on Efficient Use of Energy by supporting human resource development and institutional capacity building. Both projects have been considered in the design of the Project, the Project is actually an extension and continuation of JICA activities on the introducing of energy management systems.

Planned stakeholder participation

There were different levels of stakeholder consultation planned in the ProDoc. On a high-level, stakeholder coordination was planned to take place in the Project Board. The Project Board was supposed to consist of the Ministry of Mining and Energy (MoME), UNDP, Ministry of Education and the Standing Conference on Towns and Municipalities (SCTM). Moreover, it was planned to facilitate contacts and co-operation between different stakeholder groups at the national and international level by organizing seminars, workshops and other public events, thereby bringing project proponents, policy makers and potential investors / other donors together. On an international level, the co-operation between different Balkan countries, from which many have been implementing or are initiating activities of similar kind, seemed to be mutually beneficial. The ProDoc also included plans of

exploring the opportunities for establishing a network of energy managers in co-operation with the SCTM.

The Project design differentiates well between high-level coordination through a Project Board as well as cooperation on an operational level between participating municipalities and related stakeholders. This differentiation allowed an effective, direct coordination within a small core group of stakeholders, supported by various activities on different stakeholder levels.

Replication approach

The EMIS project in Serbia is a successful replication of a project in Croatia, within which the EMIS software was developed and energy management was introduced to municipalities. Replication is supported by the regulatory framework, which makes energy management compulsory for self-governments with more than 20,000 inhabitants. The ProDoc also envisaged the application of energy management and the EMIS software in other countries in the region, which contributes to further replication.

This approach shows the excellent embedding of the project, building on the successfully implemented EMIS project in Croatia and further replicating the approach and software in the region.

UNDP Comparative Advantage

The project is in compliance with the comparative advantages matrix approved by the GEF Council, where UNDP is assigned a leading role for technical assistance and capacity building on climate change. UNDP has a strong comparative advantage in the implementation of projects both in the area of climate change mitigation and urban/local development, including highly relevant recent experience in Croatia from the introduction of EMIS and implementation of energy-efficiency measures in Serbia through previous work.

Linkages between project and other interventions within the sector

In December 2016 UNDP signed an MoU with the GIZ Project “Energy Efficiency in Public Buildings”. The two parties have agreed to harmonize and coordinate relevant activities taking into consideration that it is necessary to have technical preparation of a large number of projects, which implies the existence of a developed system for data collection on public buildings and energy consumption in them, for the achievement of this objective. There were certain overlaps in municipalities, however, GIZ focused their work on the transposition of the Energy Performance of Buildings Directive (EPBD) and working with the Ministry of Construction, whereas the Project focused on working with the MoME.

The Swiss State Secretariat for Economic Affairs (SECO) initiated in 2018 the “Municipal Energy Efficiency and Management Project - MEEMP” aimed a more sustainable energy management at the municipal level through the introduction of the European Energy Award and improved energy efficiency in public buildings in 4 Serbia municipalities (Kruševac, Paraćin, Užice and Vrbas). UNDP and SECO agreed to cooperate in order to avoid overlapping and exploit synergies of both projects. The SECO project will use EMIS as the main tool for energy management and investment appraisal. The cooperation has been formalized through an MoU between the parties signed in January 2019. There has been intensive contact between UNDP and the consortium hired to carry out the MEEMP project to secure no overlaps as well as cooperation based on the MoU.

Throughout the Project, there has been an intensive and fruitful cooperation with JICA. The Project is actually an extension and continuation of JICA activities on the introducing of energy management systems. JICA started activities in 2009 and finalized work in 2017, the project partner was the Ministry of Mining and Energy. In cooperation with experts from Japan, the JICA project has developed the legal and institutional framework for the implementation of the energy management system in Serbia modelled after the Japanese framework. JICA also financed the procurement of devices and measuring technology for a specialized laboratory intended to be used for training of energy managers. This laboratory is operating within the Faculty of Mechanical Engineering as this institution has been authorized by the Ministry of Mining and Energy, in line with the law and bylaws relevant to this field, to deliver practical training for energy managers and energy advisors. The training of energy managers in which UNDP Project actively participates is now taking place at the Facility. JICA had provided a co-financing letter for the Project.

On one funding call, the Project cooperated with KfW under their MEGLIP (Municipal Environmental Grant-Loan Investment Programme) Programme. Under MEGLIP, KfW provides soft loans with a maturity of up to 10 years as well an investment grant between 15% and 20%. KfW provided a co-financing letter for the Project, no MoU had been signed.

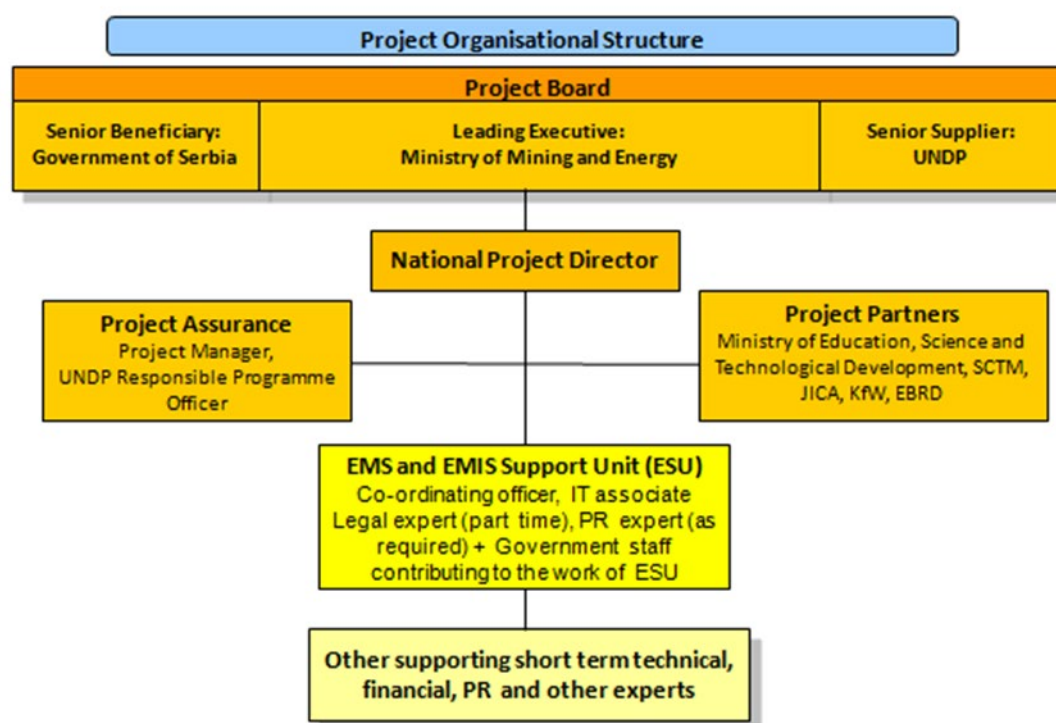
Management arrangements

The EMIS Project was implemented by UNDP, the Executing Agency was the Ministry of Mining and Energy (MoME). Day-to-day management of the Project was carried out by a Project Management Unit (PMU), established using UNDP contractual modalities and reporting to the GEF Implementing Agency (UNDP Serbia). The PMU consisted of a Project Manager (Maja Matejic), two Project Coordinators (Lazar Divjak and Dragan Urosevic) and one Project Assistant (Natasa Cakarmis).¹ A Project Board has been established, which consists of Ministry of Mining and Energy and UNDP. Originally, the Ministry of Education and the SCTM were planned to be on the board as well, but this was revised in the inception phase. The Project Board held 12 meetings during the course of the Project with MoME, UNDP and PMU participating in all meetings.

The figure below shows the original project organisation structure.

Figure 1: Project Organisation Structure

¹ The Project Manager and one Project Coordinator (Lazar Divjak) were also involved in the Serbian Biomass Project.



4.2 Project implementation

Adaptive management, incl. changes to the project design and project outputs during implementation

Throughout the implementation of the Project, only limited adaptive management interventions were required to correct shortages in project design or to bring the project back on track. This confirms an excellent project design with well-planned activities to overcome the barriers identified in the project preparation phase. Cases of successful adaptive management were:

- It was decided to keep the Project Board slim and flexible, with only UNDP and the MoME as participants (the ProDoc also foresaw the participation of the Ministry of Education and the SCTM). Due to the change in Output 4.3, the planned participation of the Ministry of Education was not required. As there is a very close and intensive cooperation with SCTM, there was no need to include the SCTM in the Project Board either. This revised structure proved successful, as 12 board meetings were held, which gave good guidance to the Project Team. Also, meetings and minutes were effective and to the point.
- Early in the Project it became clear that Output 4.3 (updated curricula) could not be implemented as updating curricula of schools is a highly structured and time-consuming process. It was therefore considered as unrealistic to expect that the Project may be able to achieve this target by the end of the project life time. As a replacement, the Centre for Training of Energy Managers at the Faculty of Mechanical Engineering prepared and organized several knowledge innovation courses for maintenance staff and technicians from municipalities, public utility companies (such as district heating, waterworks, etc.) and other public companies. The Chamber of Commerce prepared a training course for advanced

energy management skills for maintenance staff of PUCs and other companies as well as a training course for building janitors on basics of energy management.

- The Project supported the elaboration of an investment study for energy efficiency renovation of 28 large public buildings of the central government, which led to a EUR 40 million loan signed between the Government of Serbia and the Council of Europe Development Bank (CEB). In addition, the Government of Serbia is about to sign a US\$ 1 million grant agreement with CEB to finance preparatory activities.
- The Project provided inputs concept note for the Green Climate Fund (GCF) for financing the renovation of government heritage and public buildings with the aim of reaching Near Zero Energy Buildings (NZEB) status with the renovations of these buildings.
- The project secured additional funding from the Government of Serbia for “Outcome 5: Scaling up energy efficiency investments in public buildings”. Although the agreement was already signed end of 2019, funds haven’t been sent and work hasn’t started. The co-financing commitment is considered in the financing section, but as no activities were carried out, Outcome 5 is not considered under the TE.
- There were 11 recommendations from the MTR, all of them were implemented.
- The Project Team managed to secure additional co-financing from the Chamber of Commerce and Industry.

These measures of adaptive management were helpful in improving the performance of the Project.

A key point in the ProDoc was requirements for providing GEF support to demonstration projects under Outcome 3. The following criteria were listed:

1. GEF grant to cover at maximum 20% of the total investment costs or the total GHG abatement costs for the GEF grant shall not exceed US\$ 10 per ton of CO₂ reduced, whichever comes first;
2. The use of the GEF grant can be combined with other available grant resources such as of those of the national budget funds or the investments grants complementing credit lines of the KfW, EBRD and other international financing entities;
3. GEF grant support for one project or municipality cannot exceed US\$ 50,000; and
4. The projects applying for financing shall present an adequate energy saving and GHG emission reduction monitoring and verification plan (MVP).

Whereas criteria 2-4 were implemented, criterion 1 was not considered. All 13 projects supported with GEF funding received grant contributions between 26% and 45%, 10 of these projects received support between 40% and 45%. When looking at the second condition under criterion 1 (maximum US\$ 10 per ton of CO₂ reduced), the average cost per ton of CO₂ reduced based on the GEF grant contribution given was US\$ 22.5 (based on estimated CO₂ emission reductions).

As the call was already launched in 2016, this should have been raised during the MTR. The reason given by the Project Team for not keeping the limit of 20% GEF grant contribution mentioned in the ProDoc was the lack of co-financing from the budgetary funds as well as insufficient funding from municipalities to close the gap. The GEF call was already the second call in 2016 and in order to be successful, total grant contributions between 60% and 70% were considered as necessary to attract projects.

Although this can be seen as adaptive management, as the Project Team considered the real situation on ground, alternative solutions should have been sought to solve this issue. The contribution of GEF is based on calculations of costs per ton of CO₂ avoided (in detail in section 8.5 of the ProDoc). If these calculations and framework conditions are then neglected during implementation, results don’t match the expectations from the ProDoc.

Partnership arrangements (with relevant stakeholders involved in the country/region)

The Project managed to set up excellent partnership arrangements with relevant stakeholders both in the country and the region. On a high-level, stakeholder coordination took place in the Project Board, which consisted of the Ministry of Mining and Energy (MoME), UNDP and the PMU. Coordination and cooperation with the MoME, either within the Project Board or directly, was excellent.

The Project managed to establish a close cooperation with the key stakeholders in the Project, the local self-governments. In total, MoUs were signed with 29 municipalities and 4 cities (Kragujevac, Nis, Novi Sad, Pancevo) on the implementation of the municipal energy management systems. In addition, 22 municipalities have started the implementation of EMS and EMIS without signing an MoU with UNDP. Cooperation and communication with the local self-governments was through different channels, including direct contact through the Project Team, through the help desk set-up in the MoME, through various trainings carried out or through the activities of the Standing Conference of Towns and Municipalities (SCTM), mainly through the network of energy managers.

The Project set-up good working relationships with important stakeholders supporting the process of implementing energy management on municipal level, including the Serbian Chamber of Commerce and Industry (CCIS), the Faculty of Mechanical Engineering in Belgrade, the Institute for Standardization of Serbia (ISS) and SCTM.

As mentioned in the section on linkages between the project and other interventions within the sector, MoUs were signed with key stakeholder/initiatives working on energy efficiency. This included JICA, SECO and GIZ. The cooperation with KfW was based on the MEGLIP support scheme.

The Project also supported regional, South-South cooperation. This included the following activities:

- Organizing a 5-days study visit for delegations from Bosnia and Herzegovina, Armenia, Moldova, and Ukraine in October 2019 to present to the study visit participants the Energy Management System which has been successfully implemented in Serbia.
- Support to Implementation of the Energy Management Information System in Moldova:
- After a delegation of Moldovan experts visited Serbia in October 2019, the Energy Efficiency Agency of Moldova decided to introduce this system in Moldova as well. EMIS will be first introduced in the capital, Chişinău, which has the greatest number of public buildings and then in other 32 administrative districts. Members of the PMU visited Moldova to provide technical assistance in establishing the system. The visit was organized by the UNDP office in Moldova through the Moldova Sustainable Green Cities project.
- The UNDP country office in Bosnia and Hercegovina is developing the concept for a measurement and verification module to be integrated within EMIS. The Project Team will contribute towards the development of ToR for that work.
- There is regular coordination between the users of EMIS, mainly Croatia, BiH and Serbia about potential improvements of the EMIS software. A major improvement developed during the course of the Project was the development and integration of software modules that enable automatic data exchange between the EMIS and energy suppliers (public utilities), thereby reducing the risk of mistakes while data entry.

Feedback from M&E activities used for adaptive management

The key recommendations of the Project's mid-term review conducted between April and June 2018 were as follows:

Recommendation 1: Transfer the ownership of EMIS to MoME

The server hall in the MoME has been reconstructed and equipped. The draft handover protocol has been discussed and agreed upon with the NPD and now needs to be finalized with the new government. The draft technical rulebook has been prepared and needs to be adopted by the MoME.

Recommendation 2: Determining the final status of Central EE support unit

The new organigram of the MoME including the EE Department was prepared and adopted in December 2019. The new government recently changed the structure and separated EE and Renewable Energy into separate sectors (previously EE and RE was within one sector). This is a good step forward and shows the importance of energy efficiency for the government.

Recommendation 3: Supporting transition from energy data entry to energy management

The Project has supported automatic billing as well as automatic analysis in EMIS of energy consumption in buildings and public lighting including the automatic generation of list of priorities for energy efficiency renovation and identification of potential measures. Development of EE plans in municipalities was supported, however, only a limited number of municipalities has formally adopted these plans.

Recommendation 4: Transfer web site hosting

The website has been transferred and is now hosted by the Chamber of Commerce and will continue hosting in case there are follow up activities. If these activities will not be carried out, the web site will be transferred to SCTM.

Recommendation 5: EMIS upgrades

Upgrades have been taking place and will continue to take place. The regional approach (with several countries using EMIS) will be continued, as it brings strong benefits for all countries participating. A formal agreement with the Croatian provider (APN) will be required.

Recommendation 6: Strengthening outreach to participating municipalities

Outreach activities were organized as planned in 2018 and 2019, only limited activities in 2020 due to COVID-19 situation.

Recommendation 7: Supporting networking of Energy Managers

Energy Managers Network was established within the structure of SCTM with 7 meetings held between 2017 and 2020. Two study tours have been organized to Croatia for municipal energy managers. The Project Team visited BiH and agreed on joint EMIS development.

Recommendation 8: Strengthening monitoring and verification of energy savings

An analysis of real data based on EMIS was carried out by the Project Team while the TE was held. Detailed monitoring activities were planned, but were then not carried out due to sickness of the external consultant, who then later passed away. More analyses on differences between planned and actual savings as well as between theoretical and real consumption/savings would have been helpful. The EMIS software is an extremely powerful tool which helps in providing the required data for these analyses.

Recommendation 9: Supporting scaling up of EMS and EMIS practice

EMS and EMIS were included into regular SCTM events. An investment study for EE rehabilitation of central government buildings has been elaborated, which was the basis for the government of Serbia to sign a Loan Agreement with the Council of Europe Development Bank (CEB).

Recommendation 10: Modification of Output 4.3 on updating curricula

Output 4.3 was modified, several trainings courses were developed by the Faculty of Mechanical Engineering and the Chamber of Commerce.

Recommendation 11: Modification of Output 4.5 Public outreach campaigns, events and facilities (such as EE info offices and stands)

Guidelines for energy managers on public communication and outreach were developed.

As a result, the majority of recommendations suggested during the MTR were implemented. Follow-up work will be covered in section 5.4.

Project Finance

The following table gives an overview on the project budget and expenditures from project start in October 2015 including planned expenses until December 2020. A total of US\$ 31,000 is planned to be spent in January 2021 for Outcome 4 and Monitoring & Evaluation, this has been added to 2020 expenses.

Table 3: Total Project Budget and Expenditures (in US\$)

Outcome	2015	2016	2017	2018	2019	2020	Total
Outcome 1:	0	2,210	29,539	31,554	15,314	40,215	118,833
Outcome 2:	8,535	121,095	238,531	180,516	150,745	296,799	996,221
Outcome 3:	0	21,333	329,186	226,431	136,558	39,757	753,265
Outcome 4:	0	13,136	33,649	180,697	89,404	19,500	336,387
M&E	0	363	23,344	35,084	655	30,000	89,447
Project Management	0	53,766	19,280	23,218	60,633	48,951	205,847
Total	8,535	211,903	673,530	677,500	453,310	475,223	2,500,000

The following table shows the project expenditures by budget lines and compares plan and actual.

Table 4: Project expenditures by budget lines (in US\$)

	Plan	Actual	Deviation
International Consultants	86,250.00	146,043.44	59,793.44
Local consultants	294,000.00	417,842.88	123,842.88
Contractual services – individuals	790,000.00	609,816.52	-180,183.48
Contractual services – companies	264,000.00	605,327.97	341,327.97
Grant	500,000.00	496,464.86	-3,535.14
Direct Project Costs	15,000.00	15,000.00	0.00
Travel	75,500.00	109,814.18	34,314.18
Miscellaneous	18,250.00	16,383.12	-1,866.88

Equipment and Furniture	400,000.00	46,913.22	-353,086.78
Professional services	15,000.00	2,155.44	-12,844.56
Printing and publication costs	20,000.00	14,704.71	-5,295.29
Workshops and meetings	22,000.00	19,533.66	-2,466.34
Total	2,500,000.00	2,500,000.00	0.00

After getting operational, the Project had a slow start with expenses in 2015 and 2016 and by end of 2016 expenses were around 50% behind plan. In 2017 a considerable part of the grant funding was disseminated to the selected municipalities in the GEF-supported call, which brought funding back on track.

Annual expenses for each year were as per the Annual Work Plan (AWP) for each year. The AWP's were signed off in board meetings both by MoME and UNDP. When looking at individual budget lines (e.g. international consultants, national consultants, equipment,...) there are certain deviations between ProDoc and actual expenditures. The biggest difference is under Outcome 2, where funds (mainly for the servers hosting EMIS) were initially accounted for under equipment and furniture, but then shifted to contractual services. Overall, there are only small deviations between planned and actual expenses, which indicates that there was good and tight financial management.

During the preparation phase, the Project has received co-financing commitments from UNDP, Serbian government, municipalities, international organizations and NGOs. Co-financing commitments were a total of US\$ 19.6 million, out of which US\$ 17.4 (88.8%) million were committed in cash, with the majority of contributions from the Government of Serbia and KfW. US\$ 2.2 (11.2%) million were committed in-kind. The following table gives an overview on co-financing commitments at CEO Endorsement and project end.

Table 5: Co-financing at CEO Endorsement and project end

Sources & type of co-financing	Name of co-financer	Amount confirmed at CEO Endorsement	Actual amount Contributed at project end - projection (Jan 2021)	Actual % of expected amount
		USD	USD	
CASH				
GEF Agency	UNDP	200,000	200,000	100.0%
Government	Government of Serbia EE BF	5,600,000	8,600,423	153.6%
Others	Municipalities co-financing	1,600,000	4,568,403	285.5%
Others	MEGLIP KfW	9,000,000	984,882	10.9%
Others	JICA	1,000,000	996,875	99.7%
	TOTAL CASH	17,400,000	15,350,583	88.2%
IN- KIND				
GEF Agency	UNDP	300,000	300,000	100.0%
Government	Government of Serbia	1,500,000	1,500,000	100.0%
NGO	SCTM	400,000	400,000	100.0%
NGO	Chamber of Commerce and Industry	0	100,000	N/A
	TOTAL IN-KIND	2,200,000	2,300,000	104.5%
	TOTAL	19,600,000	17,650,583	90.1%

Actual cash co-financing received was around 12% lower than committed, in-kind contributions were 4.5% higher than committed. In total, co-financing reached 90.1% of the level at CEO endorsement. The reasons for deviations are as follows:

- The contribution of the Government of Serbia was approx. 50% higher than expected. This was due to a total of 6 calls based on budgetary funding carried out between 2014 and 2020. As in the 2014 and 2020 calls the Project did not provide support during the entire call procedure, only 50% of co-financing (both from government and municipalities) was accounted.
- The contribution from the Government of Serbia also includes US\$ 48,000 for “Outcome 5: Scaling up energy efficiency investments in public buildings”. Although the agreement was already signed end of 2019, funding hasn’t been transferred up to now and work hasn’t started.
- Municipalities contributed around 3 times the co-financing estimated at CEO endorsement. There are 2 reasons for this increase: due to higher co-financing of the Government of Serbia, the absolute figure of co-financing by municipalities needs to increase. Also, the assumption in the ProDoc was that municipalities will co-finance around 22% of investment costs, whereas in reality co-financing rate was 34%.

- The biggest difference is in co-financing provided from KfW, where only around US\$ 1 million was provided compared to estimated US\$ 9 million. The main reason for this difference was the terms offered by KfW, where the grant component was between 15% and 20% of the investment costs. This offer was simply not competitive with the MoME offering a 70% grant component in the calls supported by budgetary funds.
- For reasons explained in detail in section Monitoring and Evaluation, the call launched by PIMO could not be considered.

Monitoring and evaluation: design at the entry(*), implementation(*) and overall assessment (*)²

The Project's Monitoring and Evaluation (M&E) system consist of the indicators and outputs of the Project's results framework. The M&E system also included the Project Inception Workshop, quarterly updates in the UNDP Enhanced Results Based Management Platform, annual Project Implementation Reviews (PIRs), periodic monitoring through site visits and the project Mid-Term Review. The Monitoring and Evaluation design at entry can be considered as **Highly Satisfactory (HS)**.

The MTR Report included "Recommendation 8: Strengthening monitoring and verification of energy savings" as a key finding of the review. The Project was requested to prepare technical guidelines for installation of 'smart' energy meters at a time of doing energy audits and implementing retrofit measures, which would be connected to EMIS and used for monitoring and verifying energy savings from demonstration projects. This should be accompanying with instructions on how to calculate and verify energy savings achieved. Moreover, the project was supposed to focus on 'one-year verifiable monitoring data' collection and analysis and was requested to propose and document an adequate methodology. This was specifically recommended for the at least 10 demonstration projects to be implemented with grant support from GEF as well as understanding that monitoring results will be required for the key project indicators tons of CO₂ avoided and energy savings as direct result of project activities.

At the start of the TE, monitoring data presented for the calculation of CO₂ emission reductions and energy savings was identical with data presented by the municipalities at the time of applying for funding for the various funding calls. This was despite the fact that the majority of the municipalities selected for funding presented EMIS monitoring reports, in many cases including 2019 data. A sample check carried out by the Review Team showed that there are serious differences between expected CO₂ emission reductions and energy savings and reported results. In some cases, the expected CO₂ emission reductions and energy savings were even higher than actual figures before implementation of the rehabilitation measures.

Progress with achievement of project indicators was reported in each of the PIRs, however, the reported data in the case of CO₂ emission reductions and energy savings only included figures from grant applications rather than actual data based on EMIS. The total figures reported for the projects supported by the Project were a CO₂ emission reduction of 219,500 tCO₂ and an energy saving of 1952.34 TJ, both over a period of 15 years.

An initial review was carried out for a sample of demonstration projects supported by GEF (second call in 2016). This review included comparison of estimated and actual reductions (both CO₂ and energy consumption) as well as putting the estimated reduction in relation to energy consumption and

² In addition to a descriptive assessment, all criteria marked with (*) must be rated using a six-point rating scale: 6: Highly Satisfactory (HS), 5: Satisfactory (S), 4: Marginally Satisfactory (MS), 3: Marginally Unsatisfactory (MU), 2: Unsatisfactory (U) and 1: Highly Unsatisfactory (HU)

CO2 levels before implementation of the projects. The initial review showed that there are inconsistencies in figures, with considerable differences between estimated and actual reductions, in some cases expected reductions were even higher than consumption and CO2 levels before implementation of the measures.

The table below compares expected reductions in energy consumption and CO2 with actual reductions achieved:

	Estimated savings/a			Actual savings/a			
	MJ	kWh	tCO2	kWh	Difference	tCO2	Difference
Zagubica	1,505,095.2	418,082.0	285.9	338,060.9	-19.1%	203.6	-28.8%
Ljubovija	731,678.4	203,244.0	120.0	191,641.1	-5.7%	157.8	31.5%
Zabari	447,562.8	124,323.0	49.1	287,132.0	131.0%	103.3	110.4%
Svilajnac	280,828.8	78,008.0	118.4	10,410.0	-86.7%	11.5	-90.3%
Raska	410,468.4	114,019.0	239.2	266,172.0	133.4%	187.7	-21.5%
Velika Plana	295,160.4	81,989.0	16.4	75,143.3	-8.3%	21.8	32.9%
Krusevac	432,709.2	120,197.0	73.4	37,136.6	-69.1%	18.2	-75.3%
Lapovo	388,296.0	107,860.0	57.2	56,793.1	-47.3%	86.3	50.9%
Lucani	277,786.8	77,163.0	59.3	126,805.5	64.3%	45.9	-22.6%
Sabac	257,158.8	71,433.0	79.4	17,700.9	-75.2%	49.0	-38.3%
Medveda	133,941.6	37,206.0	77.0	25,859.0	-30.5%	28.8	-62.7%
Total	5,160,686.4	1,433,524.0	1,175.3	1,432,854.3	0.0%	913.7	-22.3%

From the 13 demonstration projects supported by GEF, 2 projects had to be removed from the calculation due to inconsistent data. The overall comparison shows that – despite the fact that there are considerable variations for specific municipalities between estimated and actual savings – overall actual energy savings are at the level of estimated savings. CO2 emission reductions are 22.3% lower than expected. There are various reasons why there are differences between estimated and actual figures, such as assumptions on operation hours, working days or indoor temperature; differences in emission factors applied; heating degree days applied in calculations are not consistent with real situation; monitoring period too short to provide robust data; difficulties in monitoring consumption of solid fuels. However, data collected from the sample of GEF-supported demonstration projects is seen as an adequate basis to calculate the impact of the investment measures.

The actual figures reported by the GEF-supported demonstration projects were then extrapolated to all investment projects supported by the EMIS project in the various funding rounds. This includes the following funding rounds:

- 2014 call (executed in 2016)
- 2016 - 1st call
- 2018 call
- 2019-1st call
- 2019-2nd call
- KfW MEGLIP (2017)
- 2020 call

The 2014 and 2020 calls require special consideration. The 2014 call was launched in 2014 (before the start of the Project), but execution was delayed due to the flooding in 2014. Disbursement of funds took place in 2016 and the EMIS team supported the implementation of the project. Due to this timing,

only half of the impacts (energy savings, CO2 emission reductions, co-financing) are accounted towards the project indicators.

The situation with the 2020 call is similar, as the Project Team was only partly involved in the management of the call. The call was launched on 28 September 2020 and closed on 11 November 2020. The original plan was to launch the call in spring 2020, but due to COVID-19 situation in Serbia launching was delayed. Finalization and implementation of the call will be after the end of the Project on 31 January 2020. As for the 2014 call, only half of the impacts (energy savings, CO2 emission reductions, co-financing) are accounted towards the project indicators. The contribution towards co-financing is calculated as follows: the call has an available budget of € 2.2 million (around US\$ 2.5 million), for energy efficiency in buildings the maximum grant funding is 70%, with the remaining funds to be provided by municipalities. Assuming a 70:30 funding split, total co-financing leveraged is approx. US\$ 3.6 million, with 50% (US\$ 1.8 million) counted towards the investment project indicator. For calculating the impacts on energy savings and CO2 emission reductions, the average of all other calls (excluding the calls with GEF support and the KfW call) was taken as a basis.

During the course of the Project, the Public Investment Management Office (PIMO) launched another call for energy efficiency improvements in public buildings in municipalities. Funding for this call was provided as a loan by the World Bank, the support given to municipalities was 100% grant funding. In order to qualify as contributions towards the project indicators, results must be “a direct result of project activities” by the EMIS Project as defined in the ProDoc. The contribution to the PIMO call included providing inputs in legal documents requiring applicants to enter data for buildings included in the application in the EMIS software and defining monitoring requirements of energy of consumption of those buildings after completion. Additionally, 2 external experts hired by UNDP as technical assistance to the MoME participated in steering committee meetings. This does not qualify as “direct results of project activities”, hence the projects under the PIMO call are not considered.

The total results over 15 years of project lifetime are energy savings of 1,310 TJ and CO2 emission reductions of 123,379 tons. Energy savings are around 6% below target, CO2 emissions around 18% below target.

Recommendation 8 from the MTR was not followed for mainly 2 reasons: first of all, the technical expert who has been hired to work on monitoring first fell ill and then died in summer 2020, leaving a gap in that topic. Secondly, limitations in the entire project work through COVID-19 led to less focus on that topic than planned. This is a missed opportunity, as there is a lot of experience to be gained from comparing savings based on theoretical calculations with real, actual data collected by EMIS.

By taking into account all of the above, the rating for the implementation of the project's monitoring and evaluation is considered as **Satisfactory (S)**. Overall, the M&E system is rated as **Satisfactory (S)**.

UNDP and Implementing Partner implementation/execution(*), co-ordination and operational issues

The Project was implemented based on the UNDP National Implementation Modality (NIM) with UNDP support for specific implementation services. Day-to-day management of the Project was carried out by a Project Management Unit (PMU), established using UNDP contractual modalities and reporting to the GEF Implementing Agency (UNDP Serbia). A Project Board has been established, which consisted of Ministry of Mining and Energy, UNDP Serbia and the PMU. The PMU was answerable to the Project Board and all decisions were taken in board meetings. The Project Board,

chaired by MoME, held 12 meetings between April 2016 and May 2020 with MoME, UNDP and PMU participating in all meetings. In 2016 a special Project Implementation Group was formed to support the implementation of the Project, consisting of representatives from the MoME and the PMU. The group held 23 meetings between June 2016 and March 2020.

The Board was expected to further include representatives from the Standing Conference of Towns and Municipalities of Serbia (SCTM) and the Ministry of Education (MoE). Due to the change in Output 4.3, the planned participation of the Ministry of Education was not required. As there has been a very close and intensive cooperation with SCTM, there was no need to include the SCTM in the Project Board either. This revised structure proved successful, as 12 board meetings were held, which gave good guidance to the Project Team. Also, meetings and minutes were effective and to the point.

Co-ordination between the Ministry of Mining and Energy, UNDP and the PMU was seen excellent by all parties. The MoME specifically appreciated the extensive technical knowledge of the PMU, which was a key success factor for the project. This is also confirmed by members of the PMU being appointed by the MoME to various working groups for the preparation of different pieces of legislation related to energy efficiency and energy management.

The support of UNDP, as the Implementing Agency through its Country Office, has been good and effective throughout project implementation. UNPD participated in all 12 Board Meetings. Due to the strong and very knowledgeable Project Team, there was limited need to get involved in details of project implementation. The PMU showed very strong technical know-how, which was an essential factor for successful project implementation and highly appreciated by all stakeholders. While the PMU showed strong knowledge in details related to energy management, stronger guidance from the UNDP country office on over-arching topics (such as questions of effectiveness of various grant funding approaches, financial viability of different energy efficiency measures, suggestions for moving from a heavily grant supported system towards a more market-oriented support system) would have been helpful to even strengthen further the results and lessons learnt. The rating of the **Implementing Partner** for implementation/execution is **highly satisfactory (HS)**, the rating for **UNDP** is **satisfactory (S)**.

4.3 Results

Overall results (attainment of project objectives) (*)

The following table gives a detailed analysis of Project Goal, Project Objective and Project Outcomes. It describes the status reached at the end of the Project, gives a rating as well as a justification of the rating. The result of this detailed analysis is the Overall Project Outcome Rating.

Table 6: Progress towards Results Matrix

Project Strategy	Indicator	Baseline Level	End-of-project Target	End-of-project Status	Rating	Justification for Rating
Objective: Promote greater investment in energy-efficiency in public buildings and services in the municipal sector in Serbia	Indicator 1. Tonnes of incremental CO ₂ equivalent avoided as a direct result of project activities	0	Direct GHG emission reduction: 150 ktons of CO _{2eq} calculated over the default lifetime of 15 years of the investments or other EE measures implemented	In total 105 investment projects in municipalities have received funding from the following sources: GEF, energy efficiency budgetary fund (2014-2020) and KfW Municipal Infrastructure Credit Line (MEGLIP) implemented by the Ministry of Mining and Energy. For the calls in 2014 and 2020 only half of the expected impacts (energy savings, CO ₂ emission reductions, co-financing) are accounted towards the project indicators. The total calculated CO _{2eq} savings amount to 123.4 ktons over the expected lifetime of 15 years.	S	The CO ₂ emission reductions of rehabilitation projects directly supported by project activities reached 82.5% of the target. Without the COVID-19 related delay of the 2020 call, CO ₂ emission reductions would be close to 90% of the target, which is a minor shortcoming.
	Indicator 2. Incremental energy savings as a direct result of project activities	0	Energy savings of at least 94 TJ per year or 1,400 TJ over the default lifetime of 15 years from the investments and other measures facilitated by the project.	In total 105 investment projects in municipalities have received funding from the following sources: GEF, energy efficiency budgetary fund (2014-2020) and KfW Municipal Infrastructure Credit Line (MEGLIP) implemented by the Ministry of Mining and Energy. For the calls in 2014 and 2020 only half of the expected impacts	S	The energy savings of rehabilitation projects directly supported by project activities reached 93.8% of the target, which is a minor shortcoming.

				(energy savings, CO2 emission reductions, co-financing) are accounted towards the project indicators. The total calculated energy savings amount to 1,310 TJ over the expected lifetime of 15 years.		
	Indicator 3. Amount of investment in energy-efficiency in public buildings and services in the municipal sector directly facilitated by the project	0	15 mln US\$ by the end of the project	In total 105 investment projects in municipalities have received funding from the following sources: GEF, energy efficiency budgetary fund (2014-2020) and KfW Municipal Infrastructure Credit Line (MEGLIP) implemented by the Ministry of Mining and Energy. For the calls in 2014 and 2020 only half of the expected impacts (energy savings, CO2 emission reductions, co-financing) are accounted towards the project indicators. Total investment into energy efficiency in municipal buildings is US\$ 15.0 million.	HS	The total amount of investments into rehabilitation projects directly supported by project activities reached exactly the target.
	Indicator 4. Number of new development partnerships with funding for improved energy efficiency (IRRF Indicator 1.5.1.A)	0	30 new partnerships (i.e. 30 municipalities have formally adopted and started the implementation of EMS and EMIS)	29 municipalities and 3 cities have formally adopted and started the implementation of EMS and EMIS by signing a MoU with UNDP. In addition, 22 municipalities have started the implementation of EMS	HS	In total 55 municipalities and cities are currently implementing EMS and EMIS, thereby significantly over-achieving the target value of 30.

				and EMIS without signing an MoU with UNDP.		
	Indicator 5. Number of people benefitting from improved public services	0	1000 men benefitting from improved public services	It can be estimated that on average at least 50 people are benefitting from improved public services once a building has gone through energy efficiency improvements. With 105 buildings being supported, at least 5,250 people benefitted. No gender specific target was defined when Indicator 5 was defined in the inception phase. It can be assumed that the women and men equally benefit from improved public services, this leading to at least 2,625 women and 2,625 men benefitting.	HS	The target of 1,000 men benefitting has been overachieved.
Outcome 1: An enabling legal and regulatory framework to support adoption and effective implementation of municipal energy management systems and related energy efficiency measures.	Extent to which the required new EE policies and regulations (or those be updated) are adopted.	0	Formal adoption of at least 5 new/updated Government regulations, rulebooks and/or municipal ordinances directly supported by the project to enable effective implementation of municipal energy management and energy management information systems	Three members of UNDP Project team and four technical experts engaged by the Project in their capacity as experts have been officially appointed as members of various working groups established by the Ministry of Mining and Energy. As a result of their contributions, 5 rulebooks directly related to municipal energy management and energy information systems were adopted. Additionally, contributions were made towards the preparation of	HS	The target of supporting the adoption of 5 rulebooks directly related to municipal energy management and energy information system was reached. Additionally, the Project Team gave valuable inputs to various other rulebooks, decisions and legal documents

				rulebooks and decisions on energy efficiency as well as on the planned revision of the Law on Efficient Use of Energy. For each of the public calls, the Project Team supported the preparation of legal documents.		related to energy efficiency.
Outcome 2: Central and municipal energy efficiency support units are established and operational and their capacity is built to establish energy management and information systems (EMIS) at the municipal level	Status of the central EE Support Unit and the number of new, adequately staffed and capacitated municipal EE support units established	0	The central EE support unit either within the Ministry responsible for energy or as an independent entity established, adequately staffed and capacitated and with adequate financial allocations by the Government budget to continue its operation also after the end of the project.	The Central EE Support Unit within the Ministry of Mining and Energy is established and in operation. Financing of the Unit is provided through the relevant budget line of the Ministry. The unit comprises of 11 permanent employees, including the assistant minister, the head of the unit and 9 employees. The unit is incorporated into the organigram of the Ministry of Mining and Energy with clearly defined responsibilities and job description and required qualifications. For the work of the helpdesk to continue after the end of the Project, the MoME signed an MoU with the faculty of mechanical engineering.	S	The Central EE Support Unit has been established and is fully functional. The helpdesk has had an extremely important role in assisting municipalities in using EMIS. Further clarification of responsibilities is required to ensure sustainability of the helpdesk as well as securing know-how already accumulated.
		0	At least 30 municipalities have formally adopted and started the implementation of EMS and EMIS with: 1)	29 municipalities and 3 cities have formally adopted and started the implementation of EMS and EMIS by signing a MoU with UNDP. In	S	The target with the four sub-target has been reached, except for the sub-target of completed EE

			appointed energy managers and EE support units established; 2) EMIS data coverage of at least 80% of the energy consumption and other agreed information from the targeted municipal subsectors; 3) completed EE strategies and action plans with concrete time-bound EE targets; and 4) monthly/annual energy monitoring reports published using data from EMIS	addition, 22 municipalities have started the implementation of EMS and EMIS without signing an MoU with UNDP 1) 50 municipalities/cities have appointed licensed energy managers, all of them trained through the Project. 2) EMIS data coverage of at least 80% of the energy consumption and other agreed information from the targeted municipal sub-sectors has been reached in 28 municipalities and 5 cities. 3) Energy efficiency programmes have been adopted in 5 cities. Efficiency programmes and plans are in progress in about 46 municipalities, including elaboration of mandatory annual energy reports for the previous year, but these haven't been approved due to elections in municipalities in 2020 as well as limitations through COVID-19. 4) Publishing of annual energy monitoring reports has started in at least 29 municipalities and 3 cities.		strategies and action plans.
Outcome 3: At least 10 “best practice” demonstration projects	Number of successfully completed demonstration	0	At least 10 demonstration projects completed with at least one year verifiable	13 municipalities have successfully completed their investment projects co-financed by UNDP.	HS	The target of 10 demonstration projects has been overachieved. For

demonstrating the use of EMS and EMIS for identifying, prioritizing and leveraging financing for municipal EE investments and other related EE measures are successfully implemented with reported results for their first year of operation.	project and volume of investment leveraged by the project		monitoring data on the saved energy and GHG emissions reduced.	Achieved energy savings and reduction in GHG emissions are monitored in EMIS and were taken as a basis for calculating impacts on Indicators 1 and 2. 78 additional investment projects were carried out in municipalities and co-financed by energy efficiency budgetary fund, 14 completed investment projects were co-financed by the KfW Municipal Infrastructure Credit Facility (MEGLIP).		monitoring, results of demonstration projects co-financed by UNDP were taken as a sample, with 11 reliable data sets being the basis for calculating overall impacts.
		0	At least US\$ 15 million leveraged for new EE investments facilitated by the project.	In total 105 investment projects in municipalities have received funding from the following sources: GEF, energy efficiency budgetary fund (2014-2020) and KfW Municipal Infrastructure Credit Line (MEGLIP) implemented by the Ministry of Mining and Energy. For the calls in 2014 and 2020 only half of the expected impacts (energy savings, CO2 emission reductions, co-financing) are accounted towards the project indicators. Total investment into energy efficiency in municipal buildings is US\$ 13.7 million	S	The total amount of investments into rehabilitation projects directly supported by project activities reached 91.3% of the target, which is a minor shortcoming.

Outcome 4: Municipal Energy-Efficiency Charter signed by over 80% of all municipalities in Serbia, enhanced public awareness and improved local capacity to implement and manage investments in energy efficiency.	Number of municipalities signing the Energy Efficiency Charter	0	At least 80% of all Serbian municipalities have signed the Energy Charter with a stated intention to adopt the EMIS.	137 out of 173 municipalities have signed the Energy Charter, this is 79.2%.	S	Actual share of municipalities, which have signed the Energy Charter is very close to reaching target.
	Number of trained energy managers	0	Training of at least 100 municipal energy managers.	125 (of which 87 male and 38 female) trainees for energy management in municipalities have been trained, 121 (of which 83 male and 38 female) trainees have passed the exam and 113 trainees have obtained the energy manager license. In addition 51 trainees for energy management in buildings have been trained (of which 32 male and 19 female), 52* trainees have passed the exam (of which 38 male and 16 female) and 48 trainees have got the energy manager license (of which 35 male and 13 female). *Some high professionals have a right to go for exam directly without the training.	HS	Target of training on municipal energy management has been overachieved, additional training courses on energy management in buildings and short introductions for EMIS users were delivered as well.

				In addition, 1,111 EMIS end-users, i.e. 109 groups in 40 municipalities received a short 2-hours training on entering data into EMIS, of which 415 male and 696 female.		
	Number of professional/ vocational schools having adopted curricula with greater emphasis on state of the art energy efficient technologies and approaches.	No curricula with adequate emphasis on EE	The curricula of all professional and vocational schools dealing with energy efficiency related professional disciplines (electricians, plumbers, construction workers etc.) and located in the municipalities that have adopted EMIS have been strengthened with state of the art energy efficient technologies and approaches.	As concluded by the project mid-term review, the activity was modified as updating curricula of schools is a highly structured and time-consuming process. It was therefore considered as unrealistic to expect that the Project may be able to achieve this target by the end of the project life time. As a replacement, the Centre for Training of Energy Managers at the Faculty of Mechanical Engineering prepared and organized several knowledge innovation courses for maintenance staff and technicians from municipalities, public utility companies (such as district heating, waterworks, etc.) and other public companies. The Chamber of Commerce prepared a training course for advanced energy management skills for maintenance staff of PUCs and other	S	Trainings courses were developed by the Centre for Training of Energy Managers at the Faculty of Mechanical Engineering as well as the Chamber of Commerce.

				companies as well as a training course for building janitors on basics of energy management.		
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It is remarkable that all indicators were evaluated either with HS or S. This is a confirmation of the excellent implementation of the project. For the Overall Project Outcome Rating it has to be considered that the rating for the majority of indicators (7) was S, whereas 6 indicators were rated as HS (defined as “level of outcomes achieved clearly exceeds expectations and/or there were no shortcomings”). Taking this into account as well as the fact that key indicators for the project objective (GHG emission reductions and energy savings) were rated S, an Overall Project Outcome Rating of **Satisfactory (S)** is justified.

Relevance (*)

The work the Project carried out and the outcomes delivered are very relevant for the country for a number of reasons:

- The Project was fully in line with the “Energy Sector Development Strategy of the Republic of Serbia for the Period by 2025 with Projections by 2030” which includes the “introduction of energy management in public sector” as a key priority.
- The Strategy also included the plan to impose legal obligations for the preparation of energy balances at the level of units of local self-governments and other entities in energy management system. This was supported by the Project through assistance and guidance in improving the regulatory framework.
- The Project successfully implemented the EMIS software for more than 9,400 buildings and 9,000 points of street lighting, thereby giving decision makers and energy managers in towns and municipalities valuable information about energy consumption and CO2 emissions in their buildings. This also helped users in improving the quality of applications in the various funding calls.
- The EMIS software system applied in and further improved by the Project will be handed over to the MoME, which – in combination with the inclusion of EMIS as a mandatory tool within the official Energy Management System of the Republic of Serbia – will secure sustainability of energy management in the public sector as well as the continued application of the EMIS software.

It can be concluded that the Project was relevant for Serbia, which was strongly confirmed by all stakeholders in interviews held during the review process. By taking into account all of the above, the rating for relevance is **Relevant (R)**.

Effectiveness and Efficiency (*)

Project effectiveness evaluates to which extent an objective has been achieved or how likely it is to be achieved. The evaluation of project results in chapter “Overall results” gives detailed ratings for the Project Goal, the Project Objective and each of the Outcomes. **As such, the Satisfactory rating (S) is restated for project effectiveness.**

Project efficiency evaluates the extent to which results have been delivered with the least costly resources possible. As described in chapter “Project Finance”, all project funds have been used as described in the ProDoc and there are only small deviations between ProDoc and actual expenditures. This indicates that there was good and tight financial management.

The Project has shown adaptive management on several occasions. Minor changes in the composition of the Project Board and one output were implemented in the initial project phase. All recommendations of the Mid-Term Review were fully implemented. The most important adaptive management actions worth mentioning are extensions of

project activities towards central government public buildings, identifying additional opportunities for energy efficiency renovations.

The target of the Project was to reduce GHG emissions over the 15 years lifetime of energy efficiency investments of 150 ktons, achieve energy savings of 1,400 TJ over the same time period and facilitate investments of US\$ 15 million by the end of the Project. Based on monitoring results, the effects were calculated at 123.7 ktons GHG emission reductions, 1,313 TJ energy savings and US\$ 13.7 million investments facilitated. Overall, these key project indicators are around 10% below the targeted values. Based on this, the rating for efficiency of the Project is **Satisfactory (S)**.

Country Ownership

Country Ownership in the Project was high. There was a very strong interest of the Ministry of Mining and Energy to achieve tangible results by the Project and actively drive the implementation of energy management systems in municipalities. The NPD (National Project Director) took a very active role in the Project and was indispensable in driving the project. The fact that 6 calls for energy efficiency investments in public municipal buildings were launched during the course of the project is a clear indicator.

Other institutions involved in the implementation of the Project, such as the Standing Council of Cities and Municipalities (SCTM) and the Serbian Chamber of Commerce were strongly committed towards the project. The SCTM acted as an information exchange hub through the energy efficiency network, which met 7 times during the course of the project. The Chamber of Commerce had an important role in designing and carry out trainings courses.

In contrast to other projects, where only a small number of pilot projects are being implemented, the EMIS Project led to work on energy efficiency in a high number of municipalities. This was specifically mentioned by several stakeholders and is a good indicator of strong country ownership.

Mainstreaming

The Development Partnership Framework 2016-2020 for Serbia defined five main outcomes to set the direction of UN system development assistance for the years 2016 – 2020:

- Pillar I: Governance and Rule of Law
- Pillar II: Social and Human Resources Development
- Pillar III: Economic Development, Growth, and Employment
- Pillar IV: Environment, Climate Change and Resilient Communities
- Pillar V: Culture and Development

Energy efficiency plays an important role under Pillar IV “Environment, Climate Change and Resilient Communities” and the relevant Outcome 8: “By 2020, there are improved capacities to combat climate change and manage natural resources and communities are more resilient to the effects of natural and man-made disasters”, with a targeted reduction in final energy consumption of 9% in 2018 in comparison to 2008.

In regards to gender equality, project design as well as project implementation were focused on entities (municipalities, private companies, etc.) rather than individuals. As such, there were no significant gender concerns considered in the design of this Project.

Sustainability (*)

For sustainability, the GEF guidelines establish four areas for considering risks to sustainability, each of which should be separately evaluated and then rated as to the likelihood and extent that they will impede sustainability of the project outcomes. These risks include:

- Financial risks
- Socio-economic risks
- Institutional framework and governance risks
- Environmental risks

There are various **financial risks** to the sustainability of the outcomes of the Project. For the majority of rehabilitation projects of municipal buildings financed during the course of the Project there is little financial risk to sustainability. Investments have been made, co-financing from municipalities has been provided and municipalities benefit from lower energy costs during the technical lifetime of the technologies applied. For most of technologies (such as improved insulation or window replacement), the technical lifetime will be longer than the 15 years calculation period for project benefits, securing sustainability. The situation is slightly different for pellet/biomass systems, as there are higher operation costs and a certain risk that repairs are required before the end of the 15 years. However, due to modern systems being installed, this risk should be manageable for municipalities.

The Help Desk operated by the MoME has been an extremely important support to municipalities in taking their first steps with the EMIS software. To further increase the sustainability of the results, it is recommended to assign a person of MoME staff with the responsibility of managing the Help Desk as well as providing the necessary budget for that task.

The EMIS software has been provided by UNDP to the government of Serbia and no costs are being charged. However, there are annual maintenance costs charged by a Croatian software company for ongoing support. As these costs are limited, there should be no risk to sustainability.

The most severe financial risk to sustainability at the moment seems to be funding for further support of investments by municipalities. As usually 70% of investment costs are being supported, considerable amounts are required to continue the level of support given in the years 2016-2020. In the current system, funding is partly dependent on annual budget decisions, additional funding is coming from final electricity consumers. The long-planned start of the Energy Efficiency Fund – if sufficiently allocated with funds – would overcome this hurdle.

Overall, financial sustainability is considered as **Likely (L)**.

There is an increased level of awareness on the opportunities of improved energy efficiency in municipal buildings. The introduction of EMIS allows local decision makers, energy managers and operators of public building to get a better understanding on energy consumption and energy costs, thereby laying the basis for the identification of investment opportunities. From a socio-economic point of view there is no barrier using the outcomes of the Project, the **socio-economic** sustainability is considered as **Likely (L)**.

Through the implementation of the Project, energy management and energy management systems are well embedded in the **institutional framework**. The Project contributed towards shaping and optimizing the legal framework and has contributed

towards paving the way for amending the Law on Efficient Use of Energy. The Central EE Support Unit within the Ministry of Mining and Energy is established and in operation. The sustainability of the institutional framework and governance is considered as **Likely (L)**.

Regarding **environmental risk**, there is very limited exposure as energy efficiency improvements lead to reduction of energy inputs, thereby having a positive effect on all potential environmental risks. Therefore, the rating **Likely (L)** is given for environmental sustainability at the outcome level.

Based on the four ratings, the overall rating on the likelihood of sustainability is considered as **Likely (L)**.

Impact

The Project had a good impact on energy efficiency in Serbia. Through the Project investments were facilitated leading to total CO₂eq savings of 123.7 ktons and energy savings of 1,313 TJ over the expected lifetime of 15 years. The Project also facilitated investments of US\$ 13.7 million into the rehabilitation of municipal buildings. Additional work carried out by the project led to the elaboration of an investment study for energy efficiency renovation of 28 large public buildings of the central government, which resulted in a EUR 40 million loan signed between the Government of Serbia and the Council of Europe Development Bank (CEB). In addition, the Government of Serbia is about to sign a US\$ 1 million grant agreement with CEB to finance preparatory activities. The Project also prepared a concept note for the Green Climate Fund (GCF) for financing the renovation of government heritage and public buildings with the aim of reaching Near Zero Energy Buildings (NZEB) status with the renovations of these buildings. These activities have a good chance of generating additional benefits after the end of the Project.

With more than 9,400 buildings and 9,000 light points covered in EMIS and almost 80% of Serbian municipalities having signed the Energy Charter, the Project had a strong impact on putting the topics of energy management, energy consumption and energy costs on the agenda of municipalities. The Project laid the basis for collecting relevant data, helping energy managers and decision makers understanding the current situation. Further work is required to improve the capacity of energy managers and decision makers on the selection of feasible and financially viable investments for further improvement of energy efficiency in buildings.

Overall, impact of the Project is rated as **Significant (S)**.

5. CONCLUSIONS, RECOMMENDATIONS AND LESSONS LEARNT

5.1 Summary of Ratings

The ratings given are summarized in Table 7 below.

Table 7: Evaluation Ratings

Evaluation Ratings:			
1. Monitoring and Evaluation	rating	2. IA& EA Execution	rating
M&E design at entry	HS	Quality of UNDP Implementation	S
M&E Plan Implementation	S	Quality of Execution - Executing Agency	HS
Overall quality of M&E	S	Overall quality of Implementation / Execution	S
3. Assessment of Outcomes	rating	4. Sustainability	rating
Relevance	R	Financial resources:	L
Effectiveness	S	Socio-political:	L
Efficiency	S	Institutional framework and governance:	L
Overall Project Outcome Rating	S	Environmental:	L
		Overall likelihood of sustainability:	L

5.2 Main findings

The findings of the Terminal Evaluation are covered in detail in section 4 of the report. This chapter gives a short overview on the key findings:

- The Project managed to generate energy savings of 1,310 TJ and CO2 emission reductions of 123,379 tons over 15 years of lifetime. Energy savings are around 6% below target, CO2 emissions around 18% below target. Total investment into energy efficiency in municipal buildings during the lifetime of the project was US\$ 15.0 million, which is exactly at target.
- The Project managed to support a total of 8 funding calls, supporting a total of 105 projects. 6 of these calls were fully financed by budgetary funds through the MoME, 1 call received joint funding from budgetary funds and GEF and 1 call was fully supported by KfW. When considering the impacts on project indicators, the results from funding calls in 2014 and 2020 were only considered by 50% as the Project did not provide support during the entire call procedure.
- 32 municipalities and cities have formally adopted and started the implementation of EMS and EMIS by signing a MoU with UNDP. In addition, 22 municipalities have started the implementation of EMS and EMIS without signing an MoU with UNDP.
- 137 out of 173 municipalities have signed the Energy Charter, which is almost 80% of all Serbian municipalities.
- A total of 125 persons received training for energy management in municipalities during the course of the Project, 113 of these persons have obtained the energy manager license.
- The Project managed to sign MoUs with other initiatives and programs active in the field of energy management in Serbia, this included GIZ, SECO and JICA. By signing these MoUs and keeping good contact with these stakeholders, the Project actively contributed towards reducing the risk of overlaps between these different programs.

- The Project successfully implemented the EMIS software for more than 9,400 buildings and 9,000 points of street lighting, thereby giving decision makers and energy managers in towns and municipalities valuable information about energy consumption and CO2 emissions in their buildings. This also helped users in improving the quality of applications in the various funding calls.
- The EMIS software system applied in and further improved by the Project will be handed over to the MoME, which – in combination with the inclusion of EMIS as a mandatory tool within the official Energy Management System of the Republic of Serbia – will secure sustainability of energy management in the public sector as well as the continued application of the EMIS software.
- During the course of the project, and through cooperation with UNDP country offices in Croatia and BiH, the EMIS software was further improved, with automatic data entry as a key function to increase reliability of data.
- The Project Team identified further opportunities for renovating public buildings during the course of the Project. The elaboration of an investment study for energy efficiency renovation of 28 large public buildings of the central government was supported, which led to a EUR 40 million loan signed between the Government of Serbia and the Council of Europe Development Bank (CEB). Additionally, a concept note for the Green Climate Fund (GCF) has been prepared for financing the renovation of government heritage and public buildings with the aim of reaching Near Zero Energy Buildings (NZEB) status with the renovations of these buildings.
- Moreover, there were activities supporting South-South cooperation through study visits in Serbia from various countries in the region as well as joint activities of Serbia, Croatia, BiH and Moldova to further develop the EMIS software.
- The Project design differentiated well between high-level coordination through a Project Board as well as cooperation on an operational level between participating municipalities and related stakeholders. This differentiation allowed an effective, direct coordination within a small core group of stakeholders, supported by various activities on different stakeholder levels.
- A slim and flexible Project Board was installed with UNDP and the MoME being the only participants (the ProDoc also foresaw the participation of the Ministry of Education and the SCTM). The revised structure proved successful, as 12 board meetings were held, which gave good guidance to the Project Team. Also, meetings and minutes were effective and to the point.
- The Project saw strong country ownership, led by the Ministry of Mining and Energy. The NPD (National Project Director) took a very active role in the Project and was indispensable in driving the project. The fact that 6 calls for energy efficiency investments in public municipal buildings were launched during the course of the project is a clear indicator. Also the Standing Council of Cities and Municipalities (SCTM) and the Serbian Chamber of Commerce were strongly committed towards the project. The SCTM acted as an information exchange hub through the energy efficiency network, which met 7 times during the course of the project. The Chamber of Commerce had an important role in designing and carry out trainings courses.

5.3 Corrective actions for the design, implementation and M&E of similar future projects

There are a number of corrective actions to be suggested based on the experience and lessons learnt of the Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia Project for future projects. These are as follows:

- For future project designs a thorough analysis of the financial performance of different energy efficiency measures should be carried out. Based on this analysis, maximum grant/subsidy levels should be defined before project start. The ProDoc required a maximum GEF contribution of 20% grant funding, but allowed the combination of GEF grant funding with other grant funding without defining an upper limit. In the end, the majority of projects received grant funding between 65% to 70% without any analysis of the financial performance of the energy efficiency measures included in the applications.
- Private sector approaches such as ESCOs in the case of energy efficiency should play a stronger role in project design, thereby supporting transformational change. Grant support will still be necessary for certain activities in the future, however, the target of market-based solutions involving private sector should be seen as a key driver for securing sustainability and replicability. These approaches should play a more prominent role in project design.
- Assessment of financial viability, independent evaluation on funding level required
- The Project had a strong focus on implementing the EMIS software in municipalities and providing training mostly on data collection and data entry as well as training energy managers. Interviews with various energy managers in municipalities led to the conclusion that a coaching support would have been helpful for the majority of energy managers. Going through the training is one thing, applying the know-how acquired in reality is another thing. Support from experienced energy managers in form of coaching could have been helpful in further improving the performance of energy managers.
- The ProDoc has focused strongly on energy managers as the key addressees for energy management activities. Project implementation showed that decision makers and end users also play an important role in the implementation of energy management systems and specific training and capacity building needs to be provided to these groups. Also, reporting functions in software should be able to support the different information needs of these different groups.
- In the project design a help desk was mentioned, but its importance has been underestimated. Implementing a software system with a large number of municipalities leads to numerous questions on various details. Providing efficient support in answering these questions and solving issues is an important factor in securing an improved data quality in the software.
- Implementing a project with that many stakeholders (in the end more than 50 municipalities participated) requires extensive capacity plus excellent know-how within the PMU. Sufficient staffing is required to handle that work load and to allow sufficient time to tackle strategic issues (e.g. financial viability of energy efficiency measures, suggestions for moving from a heavily grant supported system towards a more market-oriented support system, etc.).
- The ProDoc was not clear on the methodology of measuring actual savings in energy consumption and GHG emissions. The requirement to generate 'one-year verifiable monitoring data' was included, but no methodology on how to collect and analyze data was mentioned. Further clarity and guidance at project start on how to monitor energy savings and GHG emission reductions would be helpful, especially taking into account potential differences between theoretical calculations and actual data monitored.
- For energy efficiency projects it is recommended to add an additional component/activity looking specifically at differences between theoretical calculations and actual results based on monitoring with the aim of developing a better model on projecting savings. This will be key for ESCO arrangements, where contracts are based on theoretical calculations.
- The Serbian EMIS project has successfully proven that a regional approach to solutions can be very successful. The Project helped to further develop the EMIS

software and contributed towards further dissemination of the program in the region. This has a positive impact on the sustainability of activities in one country as well as the replicability in the region.

- Project design, especially the Project Results Framework and the M&E system should include interim targets and milestones, as these are helping project management in checking progress and taking steps of adaptive management, if necessary.

5.4 Actions to follow up or reinforce initial benefits from the project

There are a number of actions, which should be followed up to achieve sustainable benefits from the Project. Partly, these should still be carried out by the Project Team before the end of the Project, partly these are directed mainly to the Ministry of Mining and Energy and – to a lesser extent – to UNDP for follow up after the termination of the Project:

Recommendation #1 – Lessons Learned Study to be Prepared and Published

During the 5 years of the Project, the Project Team has gained extensive experience in energy management of public buildings and the application of the EMIS software. This experience is to a certain extent reflected in all materials and information prepared under the EMIS project, however, a comprehensive lessons learnt study is missing. This should be prepared by the Project manager with the support from the Project Team within the time left until the termination of the Project. Points to be covered could include:

- Data entry – pitfalls and solutions through automatic data entry
- Solid fuels (coal, biomass, pellets) – challenges in data collection and potential solutions/best practice
- Support to EMIS users – the importance of a help desk and lessons learnt/general recommendations from the work of the help desk
- Differences between theoretical calculations and real results – putting EMIS results in perspective
- Factors influencing actual savings and how to deal with them in analyses – indoor air temperature, usage of buildings and resulting working days/hours, manual operation of boilers, etc.

These lessons learnt will not only be important for further work on energy management and application of EMIS in Serbia, but could also be a basis for installing the Project Team/UNDP Country Office as a knowledge center in the region.

Recommendation #2 – Handover Protocol to be developed by UNDP

The handover protocol to transfer EMIS from UNDP has been prepared as a draft and was agreed upon with the former NDP. The protocol needs to be re-discussed with the MoME and finalized before termination of the Project. Also, it needs to be ensured that the handover protocol focuses on supporting the sustainability of project results achieved. This activity is to be led by the Project Team.

Recommendation #3 – Analysis for required levels of funding for various energy investments needs to be carried out

The Project has seen a number of funding calls with high levels of grant support. The standard grant level in budgetary fund calls was a 70% contribution, this could go up to 100% for financially severely underdeveloped³ (there is an exception on street lighting,

³ Severely underdeveloped municipalities (19 municipalities in Serbia) are municipalities with the level of development of less than 50% of national average

which is eligible for 20% grant funding). There is no evidence that analyses were carried out to investigate the funding levels required for energy efficiency investments in municipal public buildings, depending on the type of measures carried out. This is a shortcoming and should be considered in future activities both by the MoME and UNDP and in future projects to support EMIS such as the EMIS-2 project.

Different energy efficiency measures have different payback periods. Putting all measures into one basket and applying a 70% grant funding is leading to missed opportunities, as measures with a better financial viability will receive higher funding levels than required. This leads to non-optimal spending of public funds, which could be used to finance additional measures. Also, providing grant funding for measures close to financial viability reduces the potential for private sector (through ESCOs for example) to pick up these opportunities.

Also, it needs to be understood that not every investment into refurbishment of a building is triggered by energy efficiency considerations. Replacing windows after 40 years is not an energy efficiency investment, but a maintenance measure needed to be carried out anyway, otherwise the building could not be used properly. Investing into triple glazing compared to a standard window with double glazing is then an energy efficiency measure. It would be helpful to get a better differentiation between required maintenance investments and energy efficiency investments and to reflect this differentiation in future funding calls/support mechanisms.

Recommendation #4 – An analysis to define appropriate level of support should be undertaken and

Stakeholders provided feedback that extremely high grant funding levels (up to 100%) are counter-productive for a number of reasons:

- As the entire investment costs are covered, there is little motivation to optimize investments into building refurbishment.
- Once the sector sees that high grant rates are being provided, applicants wait for new funding rounds. Funding rounds with lower grant rates are less interesting (as was the case for KfW's MEGLIP call, which attracted the lowest investment of all funding calls implemented between 2016 and 2020).
- Private sector participation through ESCOs is crowded out. The purpose of these companies is to finance refurbishment activities, which have an acceptable payback period. If all measures are implemented through funding calls with high grant funding, activities with various payback periods are implemented as a package, leaving no market for ESCOs.

This should be considered by the Government of Serbia in future support schemes and an analysis for be carried out on the appropriate level of grant funding to be provided. High grant funding levels (percentage of grant funding to be decided) should only be given to municipalities in a difficult financial situation and grants should always be blended with other forms of financing (debt, municipal funds, private sector funding etc.). The level of grant funding needed to kick start the ESCO market should be analyzed. This analysis could be carried out under the EMIS-2 project.

Recommendation #5 – Municipal Plans should all be adopted

More than 30 municipalities have developed municipal EE plans, however, due to municipal elections in 2020, only a small number of plans were officially adopted. Further support shall be given to municipalities to proceed with the adoption. As time with in the remaining lifetime of the project will be too short for the Project Team to carry out this role, this additional support should be managed by the MoME in cooperation with the SCTM.

Recommendation #6 – Measures need to be put in place to make sure the Help Desk is Sustainable

The Help Desk has been an extremely important support to municipalities in taking their first steps with the EMIS software. As the EMIS software should be applied in more municipalities, it is key that the Help Desk is being sustained. To support the sustainability of the Help Desk, an MoU has been signed between the MoME and the Faculty of Mechanical Engineering aiming at continuing the practice of students being assigned as interns to the Help Desk. To further increase the sustainability, it is recommended to assign a person of MoME staff with the responsibility of managing the Help Desk as well as allocating a budget for the operation of the Help Desk. This would specifically include the organization of trainings for junior interns and ensuring that information and experience gained by senior interns is kept within the Help Desk team.

Recommendation #7 – EMIS-2 project should expand EMIS to public buildings

The activities of UNDP and the MoME to expand energy management and the application of the EMIS software to other public buildings should be continued and even intensified. The experience gained in the Project is of key importance to propose and structure support schemes for the rehabilitation of other public buildings. The loan agreement signed between the Government of Serbia and the CEB is a first success, the planned EMIS II project and the GCF application are important activities to apply lessons learnt of the EMIS Project. The lessons learned should focus on application to public buildings which is the main focus of the EMIS-2 project.

Recommendation #8 – Dissemination of EMIS software to other countries is important

The development of the EMIS software as a tool for energy management in public buildings in the region is a very special success story. The close cooperation of UNDP country offices in the region, where all partners are contributing towards the improvement of the software (e.g – Bosnia and Herzegovina, Moldova, Russia, Ukraine, Turkey etc.), is unique, should be maintained and – if possible – even extended. The continuous improvement mechanism with cost sharing between different stakeholders is leading to a much better result than if one country would proceed with developing a software solution. The further application of the EMIS software in other countries in the region should be pursued by UNDP and a strategy should be developed for disseminating EMIS on a more strategic basis with support from UNDP Istanbul Regional Hub.

Recommendation #9 – Continuous updating and improvement of EMIS software is required

During the application of the EMIS software in Serbia it crystalized that different support is required for different levels of users: end-users, energy managers and decision makers. This was reflected in the training and guidance given to the various user groups. There are a few improvements, which can be recommended for future activities:

- Automatic data entry has proven as an excellent concept to save time as well as avoiding mistakes. Automatic data entry should gradually become the common practice. Only when this is not feasible (for example due to solid fuels being used or costs related to automatic data entry systems), manual entry of data should be continued.
- Based on the feedback received from the Help Desk it should be investigated what further improvements, e.g. to the software or the process, are feasible and should be implemented.
- The TE revealed that there are various levels of capacity within municipal energy managers in interpreting data, selecting buildings for renovation measures and implementing these renovations. Additional training activities improving this capacity would be helpful.

- The EMIS software allows the automatic generation of reports, however, these reports are extremely long and very technical. To allow better communication with municipal decision makers, a summary section (max 3 pages) with the most relevant information and graphs should be developed.

Recommendation #10 – Reduce the minimum population requirements for mandatory energy management in Serbia

The EMIS software and energy management in general have proven as very effective tools for municipalities to manage their energy consumption and identify improvements within their building stock. Currently only municipalities over 20,000 inhabitants are obliged to introduce an energy management system. It is suggested that this limit is gradually reduced with a medium term target of all municipalities in Serbia applying energy management to 5,000 inhabitants. When doing this, the limited capacity of smaller municipalities needs to be taken into consideration. Also for smaller municipalities, the EMIS software is an easy first step to collect data on their public buildings and is an excellent first step towards energy management.

5.5 TE ToR (excluding ToR annexes)

Title:	International Expert - Terminal Evaluation of the GEF Project
Programme:	GEF Project: "Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia (EMIS)", PIMS No 4588
Reporting to:	M&E Officer, UNDP Serbia
Duty Station:	Home based with one mission to Serbia of 8 working days including travel
Type of contract:	Individual Contract (IC) or Reimbursable Loan Agreement (RLA) based on Long Term Agreement (LTA)
Duration:	01 October 2020 – 31 December 2020
Estimated number of working days:	28 working days (20 home based, 2 travel days, 6 days mission to Serbia)
Note:	The assignment is envisaged to take place during the COVID-19 crisis and there is a possibility that the engaged consultant will not be able to travel to Serbia the way it is envisaged within the ToR. If this proves to be the case, the assignment will be fully undertaken as home based, with a reduced total duration by at least 2 days (which were originally slated to be travel days). This is why the interested expert is expected to submit an offer which will clearly mark and separate the consultancy fee and the travel and DSA costs.

Background

a. Purpose

To undertake the terminal evaluation (TE), of the UNDP GEF Project: "Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia" (the Project), and to make recommendations that might improve further implementation of the Project.

b. Objective

To assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and to assist with the overall enhancement of UNDP programming.

c. Background Information

Since 2015 the United Nations Development Programme (UNDP), acting as an implementing agency of the Global Environment Facility (GEF), has been implementing together with the Ministry of Mining and Energy (MME) GEF Project: Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia " (<https://www.thegef.org/project/removing-barriers-promote-and-support-energy-management-information-systems-municipalities>).

With 2.3 m US\$ from the GEF, the EMIS will have a total volume of 21,9 m US\$. Co-financing is provided by Serbian institutions, JICA and KfW.

In accordance with UNDP and GEF M&E policies and procedures, all full and medium-sized UNDP support GEF financed projects are required to undergo a terminal evaluation upon completion of implementation. These terms of reference (TOR) sets out the expectations for a Terminal Evaluation (TE) of the project “Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia (EMIS)” (PIMS# 4588)

The essentials of the project to be evaluated are as follows:

Project Summary Table

Project Title:	Removing Barriers to Promote and Support Energy Management Systems in Municipalities throughout Serbia (EMIS)			
GEF Project ID:	5518		<i>at endorsement</i> <i>(Million US\$)</i>	<i>at completion</i> <i>(Million US\$)</i>
UNDP Project ID:	4588	GEF financing:	2.300	
Country:	Serbia	IA/EA own:	0.500	
Region:	Western Balkan	Government:	7.100	
Focal Area:	Climate Change	Other:	12.000	
FA Objectives, (OP/SP):	SP-2: Promote market transformation for energy efficiency in industry and the building sector	Total co-financing:	19.600	
Executing Agency:	Ministry of Mining and Energy	Total Project Cost:	21.900	
Other Partners involved:	Local municipalities, Standing Conference of Towns and Municipalities, JICA, KfW, Chamber of Commerce and Industry	ProDoc Signature (date project began):		October 15, 2015
		(Operational) Closing Date:	Proposed: October 15, 2020	Actual: January 31, 2021

The project is designed to facilitate introduction and support the implementation of municipal Energy Management Systems (EMS), including Energy Management Information Systems (EMIS), throughout Serbia and to increase the EE investments in public buildings and municipal services and to facilitate their more energy efficient operation in general. The project objective is to promote greater investment in energy-efficiency in public buildings and services in the municipal sector. The specific outcomes of the project include: 1) An enabling legal and regulatory framework to support adoption and effective implementation of municipal energy management

systems and related energy efficiency measures; 2) Central and municipal energy efficiency support units are established and operational and their capacity is built to establish energy management and information systems (EMIS) at the municipal level; 3) Central and municipal energy efficiency support units are established and operational and their capacity is built to establish energy management and information systems (EMIS) at the municipal level; 4) Municipal Energy-Efficiency Charter signed by over 80% of all municipalities in Republic of Serbia, enhanced public awareness and improved local capacity to implement and manage investments in energy efficiency.

The project is executed by the UNDP and MME in cooperation with the local municipalities. Main external project partners are the Standing Conference of Towns and Municipalities, the Chamber of Commerce and Industry of Serbia, JICA and KfW.

Duties and Responsibilities

The TE will be carried out by a team of 1 international consultant working with 1 national consultant. The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects.

a. TE Approach and Methodology

The overall approach and methodology for conducting project terminal evaluations of UNDP supported GEF financed projects has developed over time. The evaluator is expected to frame the evaluation effort using the criteria of relevance, effectiveness, efficiency, sustainability, and impact, as defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects (http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf). A set of questions covering each of these criteria has been drafted and are included with this TOR in Annex C. The evaluator is expected to amend, complete and submit this matrix as part of an evaluation inception report, and shall include it as an annex to the final report.

The evaluation will include 8 days mission to Serbia (6 work mission plus 2 days travel), to be carried out by the middle of November 2020. This 8 days includes 2 travel days and so it is breaking down into 2 days travel and 6 days on mission as work days. The cost of the mission will be paid separately by UNDP. In the event that the COVID-19 situation means that it is not possible to carry out a mission to Serbia then the evaluation will be carried out remotely. However, a final decision on this matter can be delayed as late as the end of October 2020. The timing of the mission should be such that it should take place on or before 14th November 2020.

The evaluation must provide evidence - based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, in particular the GEF operational focal point, UNDP Country Office, Project Team, UNDP GEF Technical Adviser based in the region and key stakeholders. The evaluator is expected to conduct a field mission to Serbia, including the project sites in up to three municipalities/cities: (Žagubica, Raška, Knjaževac, Lapovo, Šabac, Medveđa,

Ljubovija, Lučani, Pećinci, Svilajnac, Žabari, Kruševac and Velika Plana). Interviews will be held with the following organizations and individuals at a minimum: Ministry of Mining and Energy, three municipalities/cities, JICA, Standing Conference of Towns and Municipalities, Serbian Chamber of Commerce, representatives of other relevant stakeholders (such as SECO) and UNDP Serbia Country Office. In case of travel restriction due to the COVID-19 crisis, the interviewees will be held remotely.

b. Scope of Work

The international evaluator will review all relevant sources of information, such as the project document, project reports – including Annual APR/PIR, project budget revisions, midterm review, progress reports, GEF focal area tracking tools such as Tracking Tool for Climate Change Mitigation Projects

https://www.thegef.org/sites/default/files/documents/GEF_CC_Mitigation_Tracking_Tool_rev_19-Sep-2013.xlsx, project files, national strategic and legal documents, and any other materials that the evaluator considers useful for this evidence-based assessment.

The national evaluator will provide stock taking reports/summaries of documents written in Serbian in English as well as playing a leading role in helping to organize meetings and interviews as well as participating in these interviews. The lead role in writing the report will be with the international evaluator and the national evaluator will play a supporting role reviewing all draft documents and providing detailed inputs and comments.

A list of documents that the Project Team will provide to the evaluator for review is included in Annex B of this Terms of Reference.

c. Evaluation Criteria and Ratings

An assessment of project performance will be carried out, based against expectations set out in the Project Logical Framework/Results Framework (see Annex A), which provides performance and impact indicators for project implementation along with their corresponding means of verification. The evaluation will at a minimum cover the criteria of: relevance, effectiveness, efficiency, sustainability and impact. Ratings must be provided on the following performance criteria. The completed table must be included in the evaluation executive summary. The obligatory rating scales are included in Annex D

Evaluation Ratings:			
1. Monitoring and Evaluation	<i>rating</i>	2. IA& EA Execution	<i>rating</i>
M&E design at entry		Quality of UNDP Implementation	
M&E Plan Implementation		Quality of Execution - Executing Agency	
Overall quality of M&E		Overall quality of Implementation / Execution	
3. Assessment of Outcomes	<i>rating</i>	4. Sustainability	<i>rating</i>
Relevance		Financial resources:	
Effectiveness		Socio-political:	
Efficiency		Institutional framework and governance:	
Overall Project Outcome Rating		Environmental :	
		Overall likelihood of sustainability:	

d. Project Finance / Co-finance

The Evaluation will assess the key financial aspects of the project, including the extent of co-financing planned and realized. Project cost and funding data will be required, including annual expenditures. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as available, should be taken into consideration. The evaluator(s) will receive assistance from the Country Office (CO) and Project Team to obtain financial data in order to complete the co-financing table below, which will be included in the terminal evaluation report.

Co-financing (type/source)	UNDP own financing (mill. US\$)		Government (mill. US\$)		Partner Agencies (mill. US\$)		Municipalities (mill. US\$)		Total (mill. US\$)	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants /cash	0.20		5.60		1.00		1.60		8.40	
Loans/Concessions	-				9.00				9.00	
In-kind support	0.30		1.50		0.40				2.20	
Other	-									
Totals	0.50		7.10		10.40		1.60		19.60	

e. Mainstreaming

UNDP supported GEF financed projects are key components in UNDP country programming, as well as regional and global programmes. The evaluation will assess the extent to which the project was successfully mainstreamed with other UNDP priorities, including:

- Positive or negative effects of the project on local populations (e.g. income generation/job creation, improved natural resource management arrangements with local groups, improvement in policy frameworks for resource allocation and distribution, regeneration of natural resources for long term sustainability);
- Extent to which the project objectives conform to agreed priorities in the UNDP Country Programme Document (CPD) and other country programme documents;
- Whether project outcomes have contributed to better preparations to cope with disasters or mitigate risk, and/or addressed climate change mitigation and adaptation, as relevant
 - extent to which poor, indigenous, persons with disabilities, women and other disadvantaged or marginalized groups benefited from the project;
- Poverty-environment nexus: how the environmental conservation activities of the project contributed to poverty reduction and sustaining livelihoods
- Extent to which the project contributed to a human rights-based approach The cross-cutting assessment should take note of the points of convergence between UNDP environment-related and other development programming. The assessment will be in narrative form only, with no ratings expected.

- Assessment of gender equality should be present throughout the TE report, but a dedicated section is required that covers the areas described below. The TE report must evaluate the project's gender results which are defined as project outputs or outcomes that have been found to be contributing (positively or negatively) to gender equality and women's empowerment.

f. Impact

The evaluator will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts. Key findings that should be brought out in the evaluations include whether the project has demonstrated: a) verifiable improvements in ecological status, b) verifiable reductions in stress on ecological systems, and/or c) demonstrated progress towards these impact achievements (A useful tool for gauging progress to impact is the Review of Outcomes to Impacts (ROtI) method developed by the GEF Evaluation Office: [ROtI Handbook 2009.](#))

g. Conclusions, Recommendations & Lessons

The evaluation report must include a chapter providing a set of conclusions, recommendations and lessons.

Implementation Agreements

The principal responsibility for managing this evaluation resides with the UNDP CO in Serbia. The UNDP CO will contract the evaluator and ensure the timely provision of per diems and travel arrangements within the country for the evaluator. The Project Team will be responsible for liaising with the Evaluator to set up stakeholder interviews, arrange field visits, coordinate with the Government etc.

Evaluation Timeframe

The total duration of the evaluation will be 28 days according to the following plan:

Activity	Timing	Completion Date
Inception report including work plan and evaluation matrix reviewed and approved by UNDP	3 days	No later than 2 weeks before the evaluation mission.
Evaluation Mission*	6 days	By 15 th November 2020
Travel Days*	2 days	By 15 th November 2020
Draft Evaluation Report	14 days	Within 3 weeks of the evaluation mission
Final Report reviewed and approved by UNDP	3 days	Within 1 week of receiving UNDP comments on draft
Total	28 days	

- In case of travel restriction due to the COVID-19 crisis, the mission will be cancelled and interviews will be held remotely

Evaluation Deliverables

The evaluator is expected to deliver the following:

Deliverable	Content	Deadline	Responsibilities
Inception Report	Evaluator provides clarifications on timing and method	16 Nov. 2020	Evaluator submits to UNDP CO
Presentation	Initial Findings	30 Nov. 2020	To project management, UNDP CO
Draft Final Report	Full report, (per annexed template) with annexes	07 Dec. 2020	Sent to CO, reviewed by RTA, PCU, GEF OFPs
Final Report*	Revised report	31 Dec. 2020.	Sent to CO for uploading to UNDP ERC.

*When submitting the final evaluation report, the evaluator is required also to provide an 'audit trail', detailing how all received comments have (and have not) been addressed in the final evaluation report. The report should be in a format available in GEF guidance for conducting terminal evaluation and in the Annex D

Deliverables 1 and 2 will have to be reviewed and accepted by the Programme Officer and UNDP CO DRR.

Deliverables 3 and 4 will have to be reviewed and accepted by the Programme Officer, UNDP CO DRR and GEF Regional Technical Advisor.

Team Composition

The evaluation team will be composed of one international evaluator who will be supported by one local evaluation assistant. The evaluator shall have prior experience in evaluating similar projects. Experience with GEF financed projects is an advantage. The selected evaluator should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.

Requirements

Competencies

- Consistently ensures timeliness and quality of project work.
- Demonstrates strong oral and written communication skills.
- Evidence of ability to express ideas clearly; to work independently and in teams.

- Ability to summarize and systematize complex information and identify priorities for follow up activities.
- Shares knowledge and experience.
- Focuses on results and responds positively to feedback.
- Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability.
- Demonstrates integrity by modelling ethical standards.

Qualifications

- An advanced university degree (MSc or higher) in the project related field; (mechanical/electrical/process/agriculture/forestry/environment engineering or economy);
- Minimum 10 years of proven professional experience, preferably in energy/environmental sector since obtaining degree;
- Track record of professional international experience in project development/management/monitoring/evaluation in CC portfolio;
- Proven record of managed/developed GEF projects;
- Proven record on evaluated GEF projects (name and provide proof of 3 successfully completed evaluations for projects of similar size and nature);
- Good knowledge of international experiences, state of the art approaches and best practices in the specific areas the project and its subcomponents are dealing with;
- Experience in working with wide range of stakeholders (private, government, etc.);
- Broad understanding and knowledge of comparative experiences in implementation of EU legislation on energy efficiency and renewable energy sources.

Language

- Fluency in English

Evaluator Ethics

Evaluation consultants will be held to the highest ethical standards and are required to sign a Code of Conduct (Annex E) upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the [UNEG 'Ethical Guidelines for Evaluations'](#)

Evaluation Criteria

Cumulative analysis

When using this weighted scoring method, the award of the contract should be made to the individual consultant whose offer has been evaluated and determined as:

a) responsive/compliant/acceptable, and

b) Having received the highest score out of a pre-determined set of weighted technical and financial criteria specific to the solicitation.

** Technical Criteria weight; 70%*

** Financial Criteria weight; 30%*

Only candidates obtaining a minimum of 49 points would be considered for the Financial Evaluation

Criteria	Weight	Max. Points
<u>Technical</u>	70%	70 points
<i>Criteria A</i>	Track record of professional international experience in project development/management/monitoring/evaluation in CC portfolio	15
<i>Criteria B</i>	Proven record of managed/developed/evaluated GEF projects (name and provide proof of 3 successfully completed evaluations for projects of similar size and nature)	40
<i>Criteria C</i>	Experience in working with wide range of stakeholders (private, government, etc.); Broad understanding and knowledge of comparative experiences in implementation of EU legislation on energy efficiency and renewable energy sources	15
<u>Financial</u>	30%	30 points

ANNEX A: PROJECT LOGICAL FRAMEWORK**UPDATED LOGFRAME BASED ON MTR RECOMMENDATIONS (WITH HIGHLIGHTED CHANGES TO THE APPROVED LOGFRAME AT CEO ENDORSEMENT)**

Recommendation 10: Modification of Output 4.3 on updating curricula

Recommendation 11: Modification of Output 4.5 Public outreach campaigns, events and facilities (such as EE info offices and stands)

Suggested changes were elaborated in the MTR report and summarized in the table below.

<i>Project component</i>	<i>End of project targets as defined in the Project Results Frameworks (PRF) attached to the Inception Report (IR)</i>	<i>Changes between the original PRF and the one in the IR</i>	<i>Component specific changes to the logframe suggested by the MTR</i>	<i>Project management response and suggested revised end of project targets</i>
Project Objective: Promote greater investment in energy-efficiency in public buildings and services in the municipal sector in Republic of Serbia	Direct GHG emission reduction: 150 ktons of CO _{2eq} calculated over the default lifetime of 15 years of the investments or other EE measures implemented	No	NA	NA
	Energy savings of at least 94 TJ per year or 1,400 TJ over the default lifetime of 15 years from the investments and other measures facilitated by the project.			
	15 mln US\$ by the end of the project			

Outcome 1: An enabling legal and regulatory framework to support adoption and effective implementation of municipal energy management systems and related energy efficiency	Formal adoption of at least 5 new/updated Government regulations, rulebooks and/or municipal ordinances directly supported by the project to enable effective implementation of municipal energy management and energy management information systems			
Outcome 2: Central and municipal energy efficiency support units are established and operational and their capacity is built to establish energy management and information systems (EMIS) at the municipal level.	The central EE support unit either within the Ministry responsible for energy or as an independent entity established, adequately staffed and capacitated and with adequate financial allocations by the Government budget to continue its operation also after the end of the project. At least 30 municipalities have formally adopted and started the implementation of EMS and EMIS with: 1) appointed energy managers and EE support units established; 2) EMIS data coverage of at least 80% of the energy consumption and other agreed information from the targeted municipal subsectors; 3) completed EE strategies and action plans with concrete time-bound EE targets; and 4) monthly/annual energy monitoring reports published using data from EMIS.	No	NA	NA

Outcome 3: Central and municipal energy efficiency support units are established and operational and their capacity is built to establish energy management and information systems (EMIS) at the municipal level.	At least 10 demonstration projects completed with at least one year verifiable monitoring data on the saved energy and GHG emissions reduced. At least US\$ 15 million leveraged for new EE investments facilitated by the project.	No	NA	NA
Outcome 4: Municipal Energy-Efficiency Charter signed by over 80% of all municipalities in Republic of Serbia, enhanced public awareness and improved local capacity to implement and manage investments in energy efficiency.	At least 80% of all Serbian municipalities have signed the Energy Charter with a stated intention to adopt the EMIS.	Modification of Output 4.3 on updating curricula	Updating curricula of schools is highly structured and time-consuming process which may happen only with Ministry of Education strong involvement. It is therefore unrealistic to expect that the Project may be able to achieve this target by the end of the project life time. It is therefore proposed to modify this particular activity, which still should be focused on capacity buildings, but instead of the vocational school, the target could be to develop a course for installer and maintenance staff related to EE and RES measures. The partner for that could be the Centre for Training of Energy	New training modules shall be developed for installers/maintenance staff in municipalities

			Managers at the Faculty of Mechanical Engineering in Belgrade, which was originally supported by JICA.	
	Training of at least 100 municipal energy managers.	Modification of Output 4.5 Public outreach campaigns, events and facilities (such as EE info offices and stands)	As described in the Communication section of the report, Energy management and EMIS have been frequently presented on various occasions (workshops, trainings, national and regional TVs, meetings, international events, etc.). However, setting up EE info offices and stands across Serbia, requires resources beyond the means of the project.	Guidelines for energy managers on public communication and outreach shall be developed.
	The curricula of all professional and vocational schools dealing with energy efficiency related professional disciplines (electricians, plumbers, construction workers etc.) and located in the municipalities that have adopted EMIS have been strengthened with state of the art energy efficient technologies and approaches.		The Project could advise municipalities that as a part of their EE action plans, they should plan local promotion and awareness campaigns aiming at providing citizens with information on how they could use energy more efficiently at their homes. The municipalities may decide to set up their own EE info centres.	

ANNEX B: LIST OF DOCUMENTS TO BE REVIEWED BY THE EVALUATORS

Project document and the CEO Endorsement Request

Inception report

Annual Project Implementation Reviews

Project Midterm Review report and the Management Response to that

Minutes of the Project Board Meetings

Minutes of EMS Support Unit (BSU) meeting

Annual work plans and financial reports ‘

Any other documents and materials produced during the project implementation that are required to assess to what extent the specific project outputs and targets have been achieved

ANNEX C: EVALUATION QUESTIONS

Evaluative Criteria Questions	Indicators	Sources	Methodology
Relevance: How does the project relate to the main objectives of the GEF focal area, and to the environment and development priorities at the local, regional and national levels?			
•	•	•	•
•	•	•	•
•	•	•	•
Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved?			
•	•	•	•
•	•	•	•
•	•	•	•
Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards?			
•	•	•	•
•	•	•	•
Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results?			
•	•	•	•
•	•	•	•
Gender equality and women's empowerment: How did the project contribute to gender equality and women's empowerment?			
•	•	•	•
Impact: Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?			
•	•	•	•

Evaluative Criteria Questions	Indicators	Sources	Methodology
•	•	•	•

ANNEX D: RATING SCALES

<i>Ratings for Outcomes, Effectiveness, Efficiency, M&E, I&E Execution</i> 6: Highly Satisfactory (HS): no shortcomings 5: Satisfactory (S): minor shortcomings 4: Moderately Satisfactory (MS) 3. Moderately Unsatisfactory (MU): significant shortcomings 2. Unsatisfactory (U): major problems 1. Highly Unsatisfactory (HU): severe problems	<i>Sustainability ratings:</i> 4. Likely (L): negligible risks to sustainability 3. Moderately Likely (ML): moderate risks 2. Moderately Unlikely (MU): significant risks 1. Unlikely (U): severe risks	<i>Relevance ratings</i> 2. Relevant (R) 1. Not relevant (NR) <i>Impact Ratings:</i> 3. Significant (S) 2. Minimal (M) 1. Negligible (N)
<i>Additional ratings where relevant:</i> Not Applicable (N/A) Unable to Assess (U/A)		

ANNEX E: EVALUATION CONSULTANT CODE OF CONDUCT AND AGREEMENT FORM**Evaluators:**

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Evaluation Consultant Agreement Form⁴**Agreement to abide by the Code of Conduct for Evaluation in the UN System****Name of Consultant:** _____**Name of Consultancy Organization** (where relevant): _____**I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.**Signed at *place* on *date*

Signature: _____

⁴www.unevaluation.org/unegcodeofconduct

ANNEX F: EVALUATION REPORT OUTLINE⁵

-
- i. Opening page:
 - Title of UNDP supported GEF financed project
 - UNDP and GEF project ID#s.
 - Evaluation time frame and date of evaluation report
 - Region and countries included in the project
 - GEF Operational Program/Strategic Program
 - Implementing Partner and other project partners
 - Evaluation team members
 - Acknowledgements
 - ii. Executive Summary
 - Project Summary Table
 - Project Description (brief)
 - Evaluation Rating Table
 - Summary of conclusions, recommendations and lessons
 - iii. Acronyms and Abbreviations
(See: UNDP Editorial Manual⁶)
 - 1. Introduction
 - Purpose of the evaluation
 - Scope & Methodology
 - Structure of the evaluation report
 - 2. Project description and development context
 - Project start and duration
 - Problems that the project sought to address
 - Immediate and development objectives of the project
 - Baseline Indicators established
 - Main stakeholders
 - Expected Results
 - 3. Findings
(In addition to a descriptive assessment, all criteria marked with (*) must be rated⁷)
 - 3.1 Project Design / Formulation
 - Analysis of LFA/Results Framework (Project logic /strategy; Indicators)
 - Assumptions and Risks
 - Lessons from other relevant projects (e.g., same focal area) incorporated into project design
 - Planned stakeholder participation
 - Replication approach
 - UNDP comparative advantage
 - Linkages between project and other interventions within the sector
 - Management arrangements
 - 3.2 Project Implementation
 - Adaptive management (changes to the project design and project outputs during implementation)
 - Partnership arrangements (with relevant stakeholders involved in the country/region)
 - Feedback from M&E activities used for adaptive management
 - Project Finance:

⁵The Report length should not exceed 40 pages in total (not including annexes).

⁶ UNDP Style Manual, Office of Communications, Partnerships Bureau, updated November 2008

⁷ Using a six-point rating scale: 6: Highly Satisfactory, 5: Satisfactory, 4: Marginally Satisfactory, 3: Marginally Unsatisfactory, 2: Unsatisfactory and 1: Highly Unsatisfactory, see section 3.5, page 37 for ratings explanations.

- Monitoring and evaluation: design at entry and implementation (*)
- UNDP and Implementing Partner implementation / execution (*) coordination, and operational issues

3.3 Project Results

- Overall results (attainment of objectives) (*)
- Relevance(*)
- Effectiveness & Efficiency (*)
- Country ownership
- Mainstreaming
- Sustainability (*)
- Impact

4. Conclusions, Recommendations & Lessons

- Corrective actions for the design, implementation, monitoring and evaluation of the project
- Actions to follow up or reinforce initial benefits from the project
- Proposals for future directions underlining main objectives
- Best and worst practices in addressing issues relating to relevance, performance and success

5. Annexes

- ToR
- Itinerary
- List of persons interviewed
- Summary of field visits
- List of documents reviewed
- Evaluation Question Matrix
- Questionnaire used and summary of results
- Evaluation Consultant Agreement Form

ANNEX G: EVALUATION REPORT CLEARANCE FORM

(to be completed by CO and UNDP GEF Technical Adviser based in the region and included in the final document)

Evaluation Report Reviewed and Cleared by

UNDP Country Office

Name: _____

Signature: _____ Date: _____

UNDP GEF RTA

Name: _____

Signature: _____ Date: _____

ANNEX G: EVALUATION REPORT CLEARANCE FORM

(to be completed by CO and UNDP GEF Technical Adviser based in the region and included in the final document)

Evaluation Report Reviewed and Cleared by

UNDP Country Office

Name: _____

Signature: _____ Date: _____

UNDP GEF RTA

Name: _____

Signature: _____ Date: _____

5.6 TE evaluative matrix (evaluation criteria with key questions, indicators, sources of data, and methodology)

Evaluative Criteria Questions	Indicators	Sources	Method
Relevance: How does the project relate to the main objectives of the GEF focal area, and to the environment and development priorities at the local, regional and national levels?			
Are project outcomes contributing to national development priorities and plans in accordance with the national legal and regulatory frameworks?	Alignment to national/stakeholder priorities, clear and coherent descriptions	Project reports, stakeholders	Literature Review (LR), Interviews (I)
How does the project relate to the GEF Focal Area Objective: CCM-2: Promote Market Transformation for Energy-Efficiency in Industry and the Building Sector?	Alignment to GEF programme, clear and coherent descriptions	Project reports, stakeholders	Literature Review (LR), Interviews (I)
How did the project contribute to GHG emissions reduction within the project implementation cycle and beyond?	GHG emission reductions in tons of CO2	Project reports, calculations of GHG emission reductions from pilot projects	Literature Review (LR), Interviews (I)
Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved?			
Are the achieved project outcomes in line with the original or modified project objectives?	GHG emission reductions in tons of CO2, energy savings in TJ	Calculations of GHG emission reductions from pilot projects	Literature Review (LR), Interviews (I)
Were recommendations given during the mid-term review incorporated and was adaptive management applied?	Clear and coherent descriptions of action taken	Project reports, stakeholders	Literature Review (LR), Interviews (I)
What is effectiveness of project awareness raising and outreach activities/products on promoting the use energy management systems with project stakeholders?	Number of demo projects, Number of municipalities signing the Energy Efficiency Charter, Number of trained energy managers	Project reports	Literature Review (LR), Interviews (I)
Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards?			
How efficient was the financial management of the project, including specific reference to cost-effectiveness of its interventions as well as co-financing provided?	Evidence of clear, transparent reporting, evidence of cost effective processes and purchases, spending of	Project budget, information on co-funding	Literature Review (LR), Interviews (I)

	funds, co-funding provided		
What was the role of UNDP and Executing Agency in meeting the requirements set out in UNDP Programme and Operations Policies and Procedures?	Contribution of UNDP and Executing Agency toward project progress	Project reports, stakeholders	Literature Review (LR), Interviews (I)
Are the systems for accountability and transparency of project management approach/results and meeting the relevant national norms and standards in place?	Evidence of clear, transparent reporting, evidence of cost effective processes and purchases	Project budget	Literature Review (LR), Interviews (I)
Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results?			
Whether the risks identified in project document and PIRs were appropriate and corresponding risk management strategies/systems were adopted and implemented?	Usefulness of risk analysis and associated tools	PIRs, project reports, stakeholders	Literature Review (LR), Interviews (I)
Whether or not national stakeholders participated in project management and decision-making have ownership for project outcomes and their further replication and scaling-up?	Involvement of national stakeholders	Project reports, minutes of meetings	Literature Review (LR), Interviews (I)
Was the project sustainability strategy relevant and efficient?	Analysis of relevance of sustainability strategy	Project reports, stakeholders	Literature Review (LR), Interviews (I)
Are there any environmental risks that may pose a threat to the sustainability of the project outcomes?	Evidence that any environmental risks to sustainability have been assessed and any mitigation measures taken.	Project reports, stakeholders	Literature Review (LR), Interviews (I)
Gender equality and women's empowerment: How did the project contribute to gender equality and women's empowerment?			
Did the project contribute towards gender equality and women's empowerment?	Increased role of women in energy management systems	Project reports, stakeholders	Literature Review (LR), Interviews (I)
Impact: Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?			
What contribution did the demonstration projects have on improving the environment situation in their locations?	Environmental indicators	Reports on pilot projects	Literature Review (LR), Interviews (I)

5.7 Ratings Scales

Ratings for Outcomes, Effectiveness, Efficiency, M&E, I&E Execution 6: Highly Satisfactory (HS): no shortcomings 5: Satisfactory (S): minor shortcomings 4: Moderately Satisfactory (MS) 3. Moderately Unsatisfactory (MU): significant shortcomings 2. Unsatisfactory (U): major problems 1. Highly Unsatisfactory (HU): severe problems	Sustainability ratings: 4. Likely (L): negligible risks to sustainability 3. Moderately Likely (ML): moderate risks 2. Moderately Unlikely (MU): significant risks 1. Unlikely (U): severe risks	Relevance ratings 2. Relevant (R) 1.. Not relevant (NR) Impact Ratings: 3. Significant (S) 2. Minimal (M) 1. Negligible (N)
Additional ratings where relevant: Not Applicable (N/A) Unable to Assess (U/A)		

5.8 TE mission itinerary

Most meetings were carried out virtually, only the meeting with the National Project Director and the Head of Energy Efficiency Department were carried out in person.

Friday, October 30th

10.00 – 12.00: Meeting with the Ministry of Mining and Energy representative
 Participants: Antonela Solujić (Head of Energy Efficiency Department) and Dejan Stojadinović
 Venue: Serbian Chamber of Commerce, Resavska 13-15, office 410, Belgrade

Wednesday, November 4th

10.00 - 11.30: Meeting with the NPD
 Participants: Dr Miloš Banjac (NPD and Assistant Minister of Mining and Energy) and Dejan Stojadinović
 Venue: Serbian Chamber of Commerce, Resavska 13-15, office 410, Belgrade

Monday, November 9th

11.00 - 13.00: Meeting with the UNDP project team
 Participants: UNDP project team, Manfred Stockmayer and Dejan Stojadinović
 Venue: Online

13.00 -13.30: Meeting with the representative of JICA
 Participants: Irena Popović (JICA), Manfred Stockmayer and Dejan Stojadinović
 Venue: Online
 Topic: Collaboration with JICA

13.45 – 14.45: Meeting with the representative of the Faculty of Technical Sciences – Novi Sad
 Participants: Dr Miroslav Kljajić (Director of Energy and Processing Techniques Department), Manfred Stockmayer and Dejan Stojadinović
 Venue: Online

Topic: Technical support to energy managers in the Novi Sad area

15.00 – 15.30: Meeting with the representative of the Energy Agency of the city of Novi Sad

Participants: Dr Aleksandar Ašonja (Director of the Energy Agency and Energy Manager), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Data collection and use of EMIS

15.45-16.15: Meeting with the representative of Ljubovija municipality

Participants: Aleksandar Perić (Energy Manager), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Data collection and use of EMIS, use of project grants, monitoring of results

Wednesday, November 11th

10.00-10.30: Meeting with the representative of Svilajnac municipality

Participants: Saša Stojanović (Energy Manager), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Data collection and use of EMIS, use of project grants, monitoring of results

11.00-11.30: Meeting with the representative of Žagubica municipality

Participants: Nenad Milosavljević (Energy Manager), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Data collection and use of EMIS, use of project grants, monitoring of results

11.30 - 12.00: Meeting with the representative of Raška municipality

Participants: Nenad Ostračanin (Energy Manager), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Data collection and use of EMIS, use of project grants, monitoring of results

12.15 – 12.45: Meeting with the representative of District Heating Plant Novi Sad

Participants: Dušan Macura (Technical Director), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Technical solution for automatic data collection in Novi Sad

13.00 – 13.30: Meeting with the representative of District Heating Plant Pančevo

Participants: Zoran Božanić (Technical Director), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Technical solution for automatic data collection in Pančevo

16.30 - 16.45: Meeting with the member of Energy Managers Help Desk

Participants: Stanislava Milošević, Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Organizational arrangements and functioning of the Help Desk, issues and challenges

Thursday, November 12th

10.00 - 10.30: Meeting with the representative of the APN Croatia

Participants: Iva Fakin (Assistant Director), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Joint development of EMIS

10.45 – 11.15: Meeting with the representative of the city of Leskovac

Participants: Aleksandra Stojilković (Energy Manager), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Data collection and use of EMIS, use of project grants, monitoring of results

11.30 – 12.00: Meeting with the representative of Serbian Chamber of Commerce

Participants: Miroslav Lutovac (Director of Department for Industry), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: training courses, co-financing, web site hosting

13.00 – 13.30: Meeting with the representative of UNDP Moldova

Participants: Simion Berzoi (UNDP Moldova Project Manager), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Joint development of EMIS, project replication opportunities

14.00 – 15.00: Meeting with the representative of SECO – Municipal Energy Efficiency and Energy Management Project

Participants: Zoran Kapor (GFA), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Collaboration with SECO

15.00 – 15.30: Meeting with the representative of UNDP Bosnia and Herzegovina

Participants: Elvis Hadžikadić (UNDP Bosnia and Herzegovina Project Manager), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Joint development of EMIS

16.00 – 16.30: Meeting with the representative of Administration for Joint Services of the Government Bodies

Participants: Deana Vlasak (Head of Investment and Maintenance Department), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Data collection and use of EMIS

Wednesday, November 18th

10.00 - 11.00: Meeting with the representative of Standing Conference of Towns and Municipalities

Participants: Miodrag Gluščević (Program Director for Urban Development, Environment and Communal Utilities), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Collaboration with UNDP, Energy Efficiency Charter, network of energy managers

Monday, November 30th

13.30 - 14.30: Meeting with the representative of the UNDP Country Office

Participants: Žarko Petrović (UNDP Serbia Programme Specialist – Resilient Development), Manfred Stockmayer and Dejan Stojadinović

Venue: Online

Topic: Outbrief, issues, opportunities

5.9 List of persons interviewed

Miloš Banjac	Ministry of Mining and Energy
Antonela Solujić	Ministry of Mining and Energy
Maja Matejić	UNDP Serbia
Dragan Urošević	UNDP Serbia
Irena Popović	JICA
Miroslav Kljajić	Faculty of Technical Sciences Novi Sad
Aleksandar Ašonja	Energy Agency Novi Sad
Aleksandar Perić	Ljubovija municipality
Saša Stojanović	Svilajnac municipality
Nenad Milosavljević	Žagubica municipality
Nenad Ostraćanin	Raška municipality
Dušan Macura	DH Novi Sad
Zoran Božanić	DH Pančevo
Stanislava Milošević	Energy Managers Help Desk
Iva Fakin	APN Croatia
Aleksandra Stojilković	City of Leskovac
Miroslav Lutovac	Serbian Chamber of Commerce
Simion Berzoi	UNDP Moldova
Zoran Kapor	GFA
Elvis Hadžikadić	UNDP Bosnia and Herzegovina
Deana Vlasak	Administration for Joint Services of the Government Bodies
Miodrag Gluščević	Standing Conference of Towns and Municipalities
Žarko Petrović	UNDP Serbia

5.10 List of documents reviewed

The list of documents only includes the main documents provided. There was extensive additional documentation provided by the Project Team

In alphabetical order

Document
Annual Work Plans 2015-2020
EMIS Reports
EMIS Rulebook
Inception Report
Minutes Inception Workshop
Minutes of Meeting of Local Appraisal Committee Meeting
Minutes of 12 Board Meetings
Minutes of 23 meetings of EMSU
Minutes of 7 meetings of Energy Manager Network
Monitoring documents from funding calls
Monitoring data
MoUs with key stakeholders
MTR Report and Management Response

PIF and related documents
PIRs for 2016-2020
Project Co-financing Letters
Promotion materials
Various manuals
UNDP Prodoc and endorsement documents

5.11 Signed UNEG Code of Conduct form

Evaluation Consultant Agreement Form¹ Agreement to abide by the Code of Conduct for Evaluation in the UN System Name of Consultant: <u>Manfred Stockmayer</u> Name of Consultancy Organization (where relevant): _____ I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation. Signed at <i>Wiener Neustadt</i> on <i>29 December 2020</i> Signature:  _____

5.12 Signed TE final report clearance form

Midterm Review Report Reviewed and Cleared By: Commissioning Unit Name: _____ Signature: _____ Date: _____ UNDP-GEF Regional Technical Advisor Name: _____ Signature: _____ Date: _____

5.13 Audit trail from received comments on draft TE report

Institution/ Organization	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
UNDP	Pg. 2	12	Dragan Stefanović should be replaced with Dragan Urošević	Name corrected
UNDP	Pg.7	Table 1.1	Project Document (ProDoc) Signature Date (date project began): the date 01.20.2015 should be replaced with 21.10.2015	Date corrected
RTA	Pg. 7	Section 1.2	It would be good to add all the project dates here. When was project approved. When did it start? When was MTR? When was original end date. When was revised date.	A summary of key project dates is included in section 1.1. Details on project dates have been added to section 3.1.
RTA	Pg. 8	Section 1.2	Can you please explain the structure of the PMU as I do not see it explained anywhere else in the document.	Details on the PMU were added in Chapter 4, sub-chapter "Management arrangements".
RTA	Pg. 8	Section 1.3	What about the overall rating?	The TE guidelines don't require an overall rating of the project, but require overall rating for 4 categories (Monitoring and Evaluation, IA& EA Execution, Assessment of Outcomes, Sustainability)
UNDP	Pg. 25	Second bullet	Instead of: the Project prepared a concept note put the Project provided inputs for a concept note	Wording revised
UNDP	Pg. 26	Paragraph 2	3 cities should be replaced by 4 cities (Kragujevac, Nis, Novi Sad, Pancevo)	Wording revised
UNDP	Pg. 26	Paragraph 4	SEO should be replaced by SECO	Name corrected
UNDP	Pg. 30	Table 5: Co-financing at CEO Endorsement and project end	JICA reported the contribution of 1.5 mil EUR. Most of the contribution was disbursed in second and third year of JICA project implementation (2016 and 2017) The amount of 996.875 USD for JICA contribution should be reconsidered. This change will affect several the calculation of co-financing	JICA co-financing has been included in the total sum of co-financing, wording modified accordingly.
UNDP	Pg. 33	Paragraph 3	Pg. 33: <i>The contribution of UNDP team to MME regarding the implementation of PIMO's projects is clearly acknowledged, but categorised only as data entry to EMIS software and continuing to update data on energy consumption of those buildings after completion.</i>	The key point here is to analyse whether the projects supported under the PIMO call are "direct

		<i>Additionally, 2 external experts hired by UNDP as technical assistance to the MoME participated in steering committee meetings. This does not qualify as “direct results of project activities”, hence the projects under the PIMO call are not considered</i> In fact, the MME i.e. the EE of MME Department (the same staff which has been included in GEF project) and NPD himself actively participated in the verification of projects selected by PIMO. The special working group comprising of the members of MME (including the UNDP experts) and PIMO staff has been established in 2017. The WG was tasked to verify preselected projects against energy savings since the Energy Saving Report was foreseen as a mandatory part of application. After the verification, many projects preselected by PIMO were rejected due to their low energy-saving potential. The WG prepared the model contract with municipalities which was approved by the steering committee in 2017. The contract model contains clear obligations for municipalities regarding monitoring of energy savings through EMIS and introducing energy management system in municipalities: <i>15) When handing over the works, report on achieved energy savings (OPG forms) in accordance with the Rulebook on the way and terms of submitting data necessary for monitoring of Action Plan for Energy Efficiency in the Republic of Serbia implementation and on methodology for monitoring, verification and evaluation of its implementation, and send it over to the PIMO that will submit it to the MME</i> <i>16) Enter the data on buildings included in the Program in EMIS (ISEM) database (data on buildings and data on energy consumption for previous 2 years) and continue to update data on energy of consumption of those buildings after projects completion.</i> <i>17) Municipalities with more than 20.000 inhabitants, which are Energy Management (EM) Designated Organizations in accordance with Law on Efficient Use of Energy (LEUE) have to appoint energy managers and report on implementation of EM System as prescribed in regulation.</i> Also, the WG has prepared the “Project Operation Manual” (POM) which was in use from 2017 but was revised several times until officially adopted by the steering committee in 2018. The POM contains clear instructions related to energy management/EMIS for PIMO and municipalities: PIMO: The PIMO shall:	results of project activities”. The EMIS Project provided assistance to the MME to ensure that good governance regarding the implementation of energy efficiency projects is applied. As such, the Project supported the implementation of the PIMO call through expertise, however the projects under the PIMO call are not a direct result of the GEF Project activities. The representatives of the MME engaged in the PIMO projects were active in their roles as representatives of the MME, not as representatives of the EMIS project. It cannot be concluded that all work and decisions by the MoME related to energy efficiency have a connection to the EMIS project. Wording in the TE Report has been amended to reflect the contributions made by the PMU, however, savings achieved by projects under the PIMO call cannot be considered as they are not direct results of project activities.
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			selected projects, i.e. for the use of the WB loan is shifted from municipal to central government level. This is why the PIMO and MME have developed Monitoring, reporting and evaluation chapter in POM, as well as relevant provisions in the model contract with municipalities. This was a clear statement of the Government that these projects must result in energy and CO2 savings. UNDP CO request evaluator to reconsider its finding and accept at least some portion of the reported savings, respecting the fact that most of the aforementioned projects have been finalised recently (2019) which means that monitoring period was very short and covers only one full heating season.	
RTA	pg. 33	UNDP and Implementing Partner implementation/execution	Description of project implementation is not correct.	Wording revised to reflect actual situation.
RTA	pg. 43	Effectiveness and Efficiency	This section is insufficient in my view. The TOR calls for an analysis of the cost-effectiveness of the various project interventions and I do not see this as having been done.	This section covers effectiveness of project implementation evaluates to which extent an objective has been achieved or how likely it is to be achieved. Cost-effectiveness has been covered in section "Project Finance"
RTA	pg. 45	Sustainability	You mention the Sustainability of the EMIS Help desk in the Ministry of Mining and Energy in the recommendations. How will this be sustained and with what funds? However, it might be interesting to mention it here also	Wording regarding the Help Desk has been added.
RTA	pg. 50	Recommendation #1	The Project Manager should lead this. I respectfully submit that the Project Manager should prepare the lessons learned study with the support of the project.	Wording revised.