

TERMINAL EVALUATION:

Removing Barriers to Increase Investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities

Final Report

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Project Partners	State Agency on Energy Efficiency and Energy Savings of Ukraine Ministry for Communities, Territories, and Infrastructure Development of Ukraine

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Acronyms and Abbreviations

APR	Annual Project Review
BDF	Business Development Fund
СО	UNDP Country Office
CO2	Carbon dioxide
СТА	Chief Technical Advisor
EE	Energy Efficiency
EMIS	Energy Management Information System
EMIS&C	Energy Management Information System and Control
EPC	Energy Performance Contract
ESCO	Energy Service Company
EU	European Union
EPT	End of the Project Timeframe
FSM	Financial Support Mechanism
GEF	Global Environment Facility
GHG	Greenhouse Gas
IEA	International Energy Agency
IATI	International Aid Transparency Initiative
kWTH	Kilowatt Thermal
kWhTH	Kilowatt-hour Thermal
M&E	Monitoring and Evaluation
MinRegion	Ministry of Regional Development, Construction, Housing and Communal
	Services
Mtoe	Million tons of oil equivalent
MWTH	Megawatt Thermal
MWHTH	Megawatt-hour Thermal
NGO	Non-Governmental Organization
OECD	Organization for Economic Cooperation and Development
OEMA	Odessa Energy Management Agency
QPR	Quarterly Progress Report
PIF	Project Identification Form
PIR	Project Implementation Review
PMU	Project Management Unit
PPG	Project Preparation Grant
RSC	UNDP Regional Service Centre
RTA	UNDP Regional Technical Adviser
SAEE	The State Agency on Energy Efficiency and Energy Savings of Ukraine

SDG	Sustainable Development Goals
SEAP	Sustainable Energy Action Plan
SECAP	Sustainable Energy and Climate Action Plan
SEE	Sustainable energy and environment
Тое	Tons of oil equivalent
UNDP	United Nations Development Programme

Executive Summary

Table 1: Project Summary¹

Project Details		Project Milestones		
Project Title	Removing Barriers to Increase Investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities	PIF Approval Date:	7 November 2013	
UNDP Project ID (PIMS #):	4114	CEO Endorsement Date (FSP)/ Approval date (MSP):	16 March 2016	
GEF Project ID:	5357	ProDoc Signature Date:	14 December 2016	
UNDP Atlas Business Unit, Award ID, Project ID:	00095405	Date Project Manager hired:	1 – 2017 2 – 2022	
Country/Countries:	Ukraine	Inception Workshop Date	23 June, 2017	
Region:	CIS	Mid-Term Review Completion Date:	15 October, 2019	
Focal Area:	Climate change mitigation	Terminal Evaluation Completion date:	30 September, 2024	
GEF Operational Programme or Strategic Priorities/ Objectives:	Green, renewable energy, emissions, climate mitigation	Planned Operational Closure Date:	14 December 2021,	
	Revised Operational Date: 14 December, 20		14 December, 2024	
Trust Fund:	GEF: 5,480,000			
Implementing Partner (GEFExecuting Entity):	UNDP in Ukraine			
NGOs/CBOs involvement:	Through consultation			
Private sector involvement:	One of the beneficiaries & through consultations			
Geospatial coordinates of project sites	As per map provided in the report			

¹ Terms of Reference, UNDP GEF Project "Removing Barriers to increase investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities/EEPB" (UNDP Project ID 00095405; GEF ID 4114), 2024, with updates from the Project Team September 2024.

Project Financial Information				
PDF/PPG	at approval (US\$M)	at PDF/PPG completion (US\$M)		
GEF PDF/PPG grants for project preparation	90,000	90,000		
Co-financing for project preparation	N/A	N/A		
Project	at CEO Endorsement (US\$M)	at TE (US\$M)		
[1] UNDP contribution:	900,000	200,000		
[2] Government:	13,348,416	228,689,115		
[3] Other multi-/bi-laterals:	25,424,779	32,372,302		
[4] Private Sector:	17,000,000	522,096,730		
[5] NGOs:	N/A	N/A		
[6] Total co-financing	56,673,195			
[1+2+3+4+5]:		783,358,147		
[7] Total GEF funding:	5,480,000	5,480,000		
[8] Total Project Funding [6 + 7]	62,153,195	788,838,147		

EEPB supported the implementation of ESCO projects across all regions in Ukraine, 53 projects were implemented during 2016-2020, 63 more projects for US\$ 17.5 million were signed and 13 of them are implemented during 2021-2024.

Figure 1: Project Locations



Project Description

The objective of the project "Removing Barriers to Increase Investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities" (PIMS #4114) is to accelerate implementation of energy efficiency measures in public buildings in Ukraine through the ESCO modality, utilizing EPCs, by leveraging significant private sector investment over its eight-year implementation period, including through the launching of a financial support mechanism, as well as by introducing a single nationwide energy management information system (EMIS) for Ukraine. The project consists of the following four components:

Component 1: To formulate and introduce a streamlined and comprehensive legal and regulatory framework that promotes energy efficiency in public buildings through strengthening of monitoring and enforcement mechanisms.

Component 2: To promote private investment in energy efficiency in public buildings through appropriate catalytic financial incentives, including the establishment of a Financial Support Mechanism (FSM).

Component 3: To implement at least 10 pilot projects in selected public buildings to demonstrate the energy and cost-saving potential of energy efficiency measures.

Component 4: To establish an institutional basis and comprehensive nation-wide Energy Management Information System for public buildings in Ukraine to support energy efficiency in public buildings.

Table 2: Evaluation Ratings Table

Monitoring & Evaluation (M&E)	Rating ²
M&E design at entry	Satisfactory
M&E Plan Implementation	Satisfactory
Overall Quality of M&E	Satisfactory
Implementation & Execution	Rating
Quality of UNDP Implementation/Oversight	Satisfactory
Quality of Implementing Partner Execution	Satisfactory
Overall quality of Implementation/Execution	Satisfactory
Assessment of Outcomes	Rating
Relevance	Satisfactory
Effectiveness	Highly Satisfactory
Efficiency	Moderately Satisfactory
Overall Project Outcome Rating	Satisfactory
Sustainability	Rating
Financial resources	Moderately Likely
Socio-political/economic	Likely
Institutional framework and governance	Moderately Likely
Environmental	Likely
Overall Likelihood of Sustainability	Likely

Summary of Main Findings and Conclusions

- The EEPB has achieved or surpassed most of its end of project targets, implementing 116 ESCO projects and reaching 30,204 beneficiaries.
- The project was off to a strong start and then delayed due to a suspension. As the project
 was restarting, the full invasion occurred and the project responded to the country's urgent
 need for alternative energy sources by expanding modalities for installation of the SPPs, in
 addition to the thermo-modernization option. After restructuring the project team and
 securing a project extension, the project accomplished a tremendous amount.
- UNDP provided invaluable capacity catalyzing and facilitating multi-layered support to ensure successful interventions. Stakeholders highly valued UNDP's ability to negotiate impasses or details that stakeholders were not able to resolve on their own to complete an intervention, such as specific ESCO procedures and requirements.
- The project was well aligned with global, national and local agreements, strategies, and development plans. Communities welcomed the projects as they provided much needed

² Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight & Execution, Relevance are rated on a 6-point scale: 6=Highly Satisfactory (HS), 5=Satisfactory (S), 4=Moderately Satisfactory (MS), 3=Moderately Unsatisfactory (MU), 2=Unsatisfactory (U), 1=Highly Unsatisfactory (HU). Sustainability is rated on a 4-point scale: 4=Likely (L), 3=Moderately Likely (ML), 2=Moderately Unlikely (MU), 1=Unlikely (U)

heating and energy sources, which have become an urgent challenge across the country due to the war.

- The project's partnerships laid a strong foundation for implementation and sustainability. In addition to the central partnership with Project Board members, the project developed partnerships with municipalities, private banks, and the ESCO association.
- The project created an innovative financial mechanism through the Business Development Fund that facilitated the project's implementation and success.
- The project laid the groundwork for ESCO implementation through its drafting and advocating for the passage of regulations, legal analyses and strategic documents at the local and state-levels.
- The project mobilized over 522 million USD (planned 17 million USD) in co-financing (Table 1). The vast majority (227,189,115USD) of funding was realized through the SAEE, with additional resources provided by GIZ, IFC, USAID, and private sources.
- Although the project had not developed a specific exit strategy, numerous activities to
 facilitate sustainability of project efforts have been and are being implemented, including the
 development of a next phase with GEF support and new financial mechanisms. Local
 ownership has been integrated when possible within the context of war and will continue to
 be enhanced as the war becomes less of a factor.
- Women's participation in capacity building was high (63%). The project developed a Gender Action Plan. Female candidates were shortlisted for the interviews at the hiring procedures, female experts were invited to the capacity building activities, PSP and LWG include women, all communication materials considered promoting women in the energy sector, and gender disaggregated data was collected at all events. Other vulnerable or underserved groups were integrated into the project to a much lesser extent.
- Some South-South and Triangular Cooperation (SSTC) was integrated into learnings from the experiences of other countries, such as the UNDP-GEF Energy Efficiency Project in Croatia and some aspects in Latvia.
- Some evidence points to progress towards impact; such as, the actual cumulative direct GHG emission reduction as of June 2024 was 16,052.48 tCO2e; estimated reduction over a 20-year period was 69,190.0 tCO2e; a total of 30,204 people benefited from the project, including 63% women; and local and state-level regulations, legal analysis and strategic documents provided a strong foundation for continued progress towards broader impact.

Lessons Learned

- > Lesson #1: The ESCO model fills an important need in Ukraine.
- > Lesson #2: Legal infrastructure is critical for ensuring timely, sustainable implementation.
- > Lesson #3: Credit or revolving financing for ESCO companies.
- > Lesson #4: Direct Implementation better supports innovation.
- ➤ Lesson #5: Adaptive management is key to success.
- > Lesson #6: Knowledge sharing and transfer supports implementation and sustainability.

- Lesson #7: Multi-stakeholder engagement is critical for buy-in and country/local ownership. Lesson 8: Extensive and intentional capacity building supports transition to country ownership.
- Lesson #9: Coordination with similar projects leverages resources and the combined efforts culminate in stronger contributions and impact.
- Lesson #10: Intentional, multi-faceted strategy to gender mainstreaming results in accelerated growth of gender equality in the energy sector and would benefit other vulnerable or marginalized groups.

Table 3: Recommendations Summary Table

		Timeframe	Responsible Party	Supporting Evidence
1.	Revise and detail exit strategy A short exit strategy was developed in the original project document. A detailed articulation of the exit strategy will provide a roadmap to support continued efforts of the project. Activities providing support for knowledge transfer and country ownership have been and continue to be conducted through the current project. However, due to the focus on war efforts, local ownership should be delayed. Development of a phase 2 with GEF is already well underway and additional avenues for external support in this sector should be included in the detailed exit strategy. A detailed exit strategy would facilitate continued project efforts and important foundation building for efficient transfer of ownership, when the timing is appropriate. These additional activities may include:	By December 2024	UNDP	Criteria: Effectiveness and Sustainability
2.	Improve procedures for faster delivery UNDP should revise its internal requirements to allow for decision-making processes to occur in a timely manner for the immediate needs within Ukraine, particularly regarding business contracts that involve financial mechanisms linking banks and the Business Development Fund (BDF). The current market in Ukraine is dynamic and unpredictable. UNDP should create a process with signed agreements that will allow for fast, nimble decision-making to ensure stability and timely support to project implementation.	Immediate and Continual	UNDP	Criteria: Efficiency

3.	Enhance sharing and transferring knowledge across the region and globally Learnings should continue to be shared among others within the region and globally, further developing what was mentioned in the exit strategy, in addition to the study tours and other ongoing activities.	By December 2024	UNDP	Criteria: Effectiveness, Sustainability, Gender and Women's Empowerment, and Leave No One Behind
4.	Bolster and accelerate the establishment of NEMIS UNDP should develop a separate project that accelerates the procurement of adequate information software and builds the capacity of staff to establish the National Energy Management Information System, as well as facilitate approved procedures with SAEE and the Ministry of Reconstruction. This will facilitate streamlined information on energy use and quickly inform decision-making.	Continual	SAEE	Criteria: Effectiveness
5.	 Strengthen capacity and seek economies of scale The ESCO model would be more cost effective and have a bigger impact with increased awareness, capacity, and market efficiencies. Conduct an analysis of ESCO model cost efficiencies, including the number of strengthened SMEs to competitively compete for the contracts, feasibility for empowering women/ vulnerable group owned SMEs, and pathways for careers in the field for women, people with disabilities, and others from vulnerable groups. Strengthen the capacities and awareness of small and medium cities in the field of energy management as well as understanding the Energy Performance Contracting (EPC) and Energy Service Company (ESCO) models, ensuring a sufficient number of well- trained professionals in the field of EE and management. 	Continual	Energy Funds	Criteria: Effectiveness, Gender and Women's Empowerment, and Leave No One Behind
6.	 Increased community involvement and women-owned organizations To further support UNDP in achieving its goals of gender equality and leave no one behind, future projects should: Continue training city representatives on EPC and ESCOs with specific focus on participants who are women, people with disabilities, and from other vulnerable or less represented groups. Continue training SMEs to expand their capacity to effectively manage more or larger ESCO projects. Continue the stronger preference to women on staff at 	Continual	UNDP/ Energy Funds/ Cities	Criteria: Effectiveness, Gender and Women's Empowerment, and Leave No One Behind

	 various levels of responsibility, as well as other marginalized groups. Build capacity and prioritize opportunities for people with disabilities and from other vulnerable groups to advance in the energy management sector, similar to the current Gender Action Plan. 			
7.	 Strengthened M&E design The M&E design should provide a roadmap for implementation with a framework that measures progress. Although the project was well-designed, there remains space for improvement. Future projects should include: Theory of Change that clearly articulates the assumptions, context and pathways to change that will lead to achieving its higher level goals. Robust Results Framework with indicators focused on: Gender equality and LNOB, including indicators in the results framework that reflect the gender strategy and develop a similar strategy with indicators for other vulnerable groups. A few specially selected qualitative indicators designed to provide depth of understanding and demonstrate progress, without overburdening staff. 	Continual	UNDP	Criteria: Effectiveness and Efficiency

1. Introduction

1.1 Evaluation Purpose

This Terminal Evaluation (TE) assessed the achievement of the project results and outcomes as per the Project Document and Results Framework to draw lessons to improve sustainability of benefits from this project and aid in the overall enhancement of UNDP programming. The TE will assess the project's alignment and contributions to country priorities, and UNDP and GEF strategic goals, as well as the global Sustainable Development Goals (SDGs). The Evaluation findings will also be used to promote accountability and transparency of the project's overall performance and assess the extent of project accomplishments.

1.2 Scope of the Evaluation

The TE reviewed all interventions that have been implemented as part of the EEPB project and their influences or contributions to change from December 2016 through September 2024. The objectives for this TE are to:

- Assess the overall Project progress vis-à-vis the Result Framework based on data, qualitative information and evidence on results and identify critical gaps or delays;
- Establish the relevance, coherence, effectiveness, efficiency, performance, and success or failures of the project, including the sustainability of results and the project exit strategies;
- Assess external environment and risks, such as crisis caused by the pandemic, full scale war as well as internal, including weaknesses in programme design, management and implementation, human resource skills, and resource
- Engage all relevant stakeholders (institutions, state and local governments, the international community, etc.) in structured conversations, which will enable collective insights and distilling of key lessons learned in relation to (signals of) transformative change induced by the Project, mistakes, as well as important cross-cutting issues, such as innovation, gender equality and leaving no one behind;
- Use different level analysis to generate understanding of change processes and assess how this change was made and the what specific contributions of the Project;
- Formulate strategic recommendations for consideration by the Project owners and its partners (Project Board, UNDP, GEF and other relevant stakeholders), towards more effective Project implementation in the future, or adjustments, as needed.

The project was implemented across the state and municipal levels. Working in close collaboration with the Project Management Unit (PMU), a sample of stakeholders participated in the evaluation process, such as Project Board members, the state and local government officials, and beneficiaries. (See Annex L)

Aligned with GEF requirements, the TE assessed project performance according to the results model developed during the project's design phase with focus on four components: (1) To formulate and

introduce a streamlined and comprehensive legal and regulatory framework that promotes energy efficiency in public buildings through strengthening of monitoring and enforcement mechanisms; (2) To promote private investment in energy efficiency in public buildings through appropriate catalytic financial incentives, including the establishment of a Financial Support Mechanism (FSM); (3) To implement at least 10 pilot projects in selected public buildings to demonstrate the energy and cost-saving potential of energy efficiency measures. (4) To establish an institutional basis and comprehensive nation-wide Energy Management Information System for public buildings in Ukraine to support energy efficiency in public buildings.

1.3 Methodology

Our approach is anchored in principles of human rights, emphasizing people-centered and appreciative methods with a strong commitment to a participatory and culturally sensitive process. Recognizing the importance of gender responsiveness, our methodology was designed to be inclusive and reflective of diverse perspectives. This TE was conducted in accordance with the Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects and OECD-DAC standard evaluation criteria and principles.

To assess the relevance, efficiency, effectiveness, sustainability, impact and cross cutting issues as provided in the ToR, more specific evaluation questions were developed and further refined during the inception phase. A detailed evaluation matrix was then prepared, which outlined the evaluation criteria, main evaluations questions, data sources and methods and indicators to serve as a roadmap for the implementation of the TE. (See Annex E)

A mixed methods approach was employed to ensure data collected from a range of perspectives and depth of understanding. The evaluation employed a combination of purposive and convenience sampling strategies. To ensure a comprehensive and representative sample across diverse groups and levels, a stakeholder mapping initiative was collaboratively conducted with support from the PMU, resulting in a list of key informants from UNDP, GEF, Project Board, local governments, and beneficiaries. (See Annex C & L). Rating scales provided by the GEF guidelines were utilized to assess the overall results of the project. (See Annex H)

The evaluators facilitated an inception phase in close collaboration with the PMU to appropriately design the evaluation process, a data collection phase to gathering data from primary and secondary sources, and an iterative data analysis and reporting phase where representatives from UNDP and project partners had opportunities to provide inputs during a debriefing and/or written feedback to inform the final TE report.

1.4 Data Collection & Analysis

To best meet the objectives of this evaluation, the evaluation team collected data through:

- Systematic desk review of all relevant project documents provided by the Project Team (See Annex D)
- Key informant and semi-structured virtual interviews crafted to inform the evaluation questions in greater depth (See Annex F)
- Virtual pilot site visits and spot checks in selected locations (Chornomorsk, Korosten, Odessa, Slavutych, Truskavets, Vyshhorod) to validate project activities and innovations, and obtain feedback from recipients of project training and other initiatives

Data analysis was conducted through an iterative process framed by the Evaluation Matrix and GEF TE requirements to ensure a robust and nuanced assessment. A preliminary findings workshop with key stakeholders validated and enriched the analysis, while ensuring practical, actionable recommendations. This process resulted in an evidence-based analysis with triangulated data that ensures credible, reliable and useful findings. The analysis also included an assessment of the project's exit strategy, focusing on sustainability and scalability.

1.5 Ethics

The TE has been conducted through a lens of the values and obligations outlined in the UNEG 'Ethical Guidelines for Evaluators.' In accordance with the guidelines, our evaluation team employed a practice of respecting people's right to provide information in confidence and informed participants about the scope and limits of confidentiality, while ensuring that sensitive information cannot be traced to its source. This final TE report does not indicate any specific information that can be traced to an individual participant. Our evaluation team consisted of international and independent consultants, who had no prior involvement in project and work with the highest degree of integrity. (See Annex I)

1.6 Limitations

As with all evaluations, each evaluation exercise has its own limitations. In this case we encountered the following limitations:

- Given that the evaluation was conducted virtually, site visits by the evaluation team was not possible. The virtual recordings and summaries of the project's planned press tours enhanced the quality of data collection and analysis.
- Participation of interviewees due to busy schedules and impacts of the full invasion was expertly addressed by the PMU and represented the high level of interest by stakeholders in the project.
- Condensed time frame for the evaluation will be overcome by the evaluation team working intensively, both collaboratively and in parallel to ensure the highest quality report.
- Specific technical issues will be addressed by employing two consultants responsible for data collection. In addition, the PMU will contract an independent translator as needed. This

approach ensures that questions are presented in the preferred language of the stakeholders or groups being interviewed, thereby facilitating effective communication.

1.7 Structure of the Terminal Evaluation Report

This Terminal Evaluation Report provides detailed findings using the framework outlined by UNDP-GEF in the TOR and the TE Guidelines 2020. Overall conclusions, lessons learned and actionable recommendations have been developed based on the detailed finding. The main contents of the TE Report include: 1) Executive Summary; 2) Introduction; 3) Project Description; 4) Findings framed according to project design, project implementation, and project results and impacts); and 5) Conclusions, Recommendations and Lessons Learned.

2. Project Description

2.1 Project Start and Duration

The official start date for the project was December 14, 2016 and its completion date has been extended to December 14, 2024.

Table 4: Project Milestones

Key Project Dates/Milestones		
Planned project duration	60 months	
PIF Approval Date	Nov 7, 2013	
CEO Endorsement Date	Mar 16, 2016	
Project Document Signature Date (project start date):	Dec 14, 2016	
Date of Inception Workshop	Jun 23, 2017	
First Disbursement Date	Mar 29, 2017	
Expected Date of Mid-term Review	Jun 14, 2019	
Actual Date of Mid-term Review	Oct 15, 2019	
Expected Date of Terminal Evaluation	Sep 14, 2024	
Original Planned Operational Closure Date	Dec 14, 2021	

Revised Planned Operational Closure Date	Dec 14, 2024

2.2 Development Context

The Ukrainian economy is characterized by high-energy consumption and high carbon intensity throughout almost all sectors of the economy, including both residential and public buildings.

Since the EEPB project implementation started, Ukraine has made significant commitment in energy efficiency development, driven by **environmental, socio-economic, institutional, and policy changes**. These developments have been shaped by both internal and external factors, particularly as the country works to reduce its reliance on fossil fuels, strengthen its energy security, and align with EU energy standards.

Environmental. Ukraine's efforts to combat climate change have increased, partly due to international commitments such as the Paris Agreement and its alignment with the EU Green Deal. Also, improving energy efficiency is critical in reducing greenhouse gas (GHG) emissions, which has been a priority for Ukraine's environmental policies. Ukraine has been focusing on increasing its share of renewable energy sources. Energy efficiency goes with promoting renewables, as it allows for better integration of solar, wind, and biomass energy into the national grid.

Socio-economic factors. Since the conflict began in 2014, and particularly since the full-scale war in 2022, Ukraine's energy infrastructure has been damaged. This has emphasized the need for energy efficiency as a way to rebuild infrastructure sustainably. Global and local energy price fluctuations have significantly impacted Ukraine's economy. The energy efficiency sector, inluding the EEPB project has accelerated job creation, especially in green building, retrofitting, and renewable energy industries, contributing positively to Ukraine's economy and offering new employment opportunities in the post-crisis recovery phases.

Institutional Factors. The rise of ESCOs has been a key development in the institutional framework for energy efficiency. These companies helped to implement energy-saving projects in the public and private sectors, using performance-based contracts where savings from reduced energy consumption cover the costs of the project. Ukraine has received substantial support from international organizations such as the World Bank and the European Union for energy efficiency projects. These institutions have provided both financial and technical assistance, accelerating project implementation.

Policy factors. Ukraine adopted the NECP in alignment with the EU Energy Community³, committing to increase energy efficiency and climate actions across sectors by setting specific targets and timelines. These policies have become a foundation for various energy-saving measures. In 2017, the EU-Ukraine Association Agreement came into full force, integrating Ukraine into the EU's

³ <u>https://www.energy-community.org/news/Energy-Community-News/2024/06/25b.html</u>

regulatory framework^{4]}. This includes energy efficiency standards and environmental regulations, pushing the country to modernize its energy sector and improve energy savings. Ukraine passed a comprehensive Energy Efficiency Law in 2021 that seeks to implement EU standards in buildings, industry, and public infrastructure. Ukraine's Energy Strategy until 2050 focuses on energy independence, security, and sustainability. It places a strong emphasis on energy efficiency, targeting reductions in energy intensity across the economy and ensuring a sustainable energy supply for the future.

External factors. The full scale war has dramatically reshaped the energy landscape in Ukraine. Since the onset of the conflict, especially after 2022, energy infrastructure, including power plants, gas pipelines, and heating networks, have been targeted. This has caused power outages and a heightened need for more resilient and energy-efficient systems. The global push towards clean energy and sustainability has been a key factor in Ukraine's energy efficiency initiatives. EU directives and international climate commitments have driven policy reforms and financing towards green energy and energy efficiency. Reducing dependence on imported energy has been a critical driver for energy efficiency. This has led to an increased focus on optimizing domestic energy resources and investing in energy-saving technologies to enhance national energy security.

The EEPB project was focused on public building energy efficiency problems, so the project sought to address it.

The building sector (residential, commercial and public services) consumes about 37% of total heat and 25% of all electricity in Ukraine, making this sector a major contributor to greenhouse gas emissions. Energy efficiency in buildings in Ukraine is on average approximately three to four times lower than that in West European countries.

It was expected to implement at least 10 pilot EPC energy savings projects in 10 different municipalities in Ukraine and achieve cumulatively 2,34 energy savings; these savings will result in a reduction of 8,893 tons of CO2 equivalent over the 20-year equipment lifetime. The project was expected to achieve this target by introducing a conducive regulatory framework for the establishment and operation of ESCOs through the EPC modality and by putting in place a financial support mechanism that, together, will facilitate private sector participation in implementing energy efficiency measures in public buildings. This was to be combined with a single nationwide energy consumption database for energy consumption in public buildings and an energy management information system which would facilitate additional investments in energy efficiency.

2.2.1 Theory of Change

Typically, the Global Environment Facility (GEF) allocates funds with the expectation of catalyzing additional funding from various sources, including governmental and other contributors.

⁴ <u>https://eur-lex.europa.eu/EN/legal-content/summary/association-agreement-with-ukraine.html</u>

As highlighted in the project document, the project design delineated the high interest in striving towards energy independence and reducing greenhouse gas (GHG) emissions. Security of energy sources was a concern from the outset of this project and exacerbated by the full invasion of Russia. To address these concerns, the project set out to create an enabling legal environment, develop a single nationwide energy management information system (EMIS), build local capacity, and engage local banks to support the implementation of the ESCO model in small and medium sized cities across the country.

Due to a suspension of activities, the COVID pandemic, the full invasion of Russia and ongoing hostilities, the project has adapted its results framework and work plan to reflect this new context. The following is a working Theory of Change for the purposes of this TE, as the Evaluation Team understands them.

Working Theory of Change

Assumptions

- 1. Political commitment: Continued commitment of and cooperation by project partners to support and implement the ESCO model and energy management, including government agencies and municipal authorities.
- 2. Financial Commitment: The engagement and support of key private sector institutions (particularly banks) are critical to creating a feasible, innovative financing mechanism for EEPB implementation.
- 3. Local Government Capacity Building: Building the capacity of local governments is essential for the identification, implementation, and monitoring of EEPB projects for small and medium sized cities across the country.
- 4. Policy and Regulatory Framework Adoption: Collaboration with state and municipal authorities is expected to result in the design and adoption of policies and regulations that facilitate the implementation of the EEPBs.

Inputs

- 1. Financial Resources: Funding is provided to support public and financial institutions in establishing innovative financing mechanisms.
- 2. Expertise and Technical Assistance: Technical assistance is delivered to local governments, state-level authorities for capacity building, policy design, and adoption.
- 3. Communication and Advocacy Resources: Resources are allocated for awareness campaigns and advocacy efforts.

Activities

C1: Formulation and introduction of a streamlined and comprehensive legal/regulatory, and policy framework for promoting energy efficiency in public buildings

C2: Promotion of private investment in energy efficiency in public buildings through appropriate catalytic financial incentives.

C3: Demonstration of the implementation of EPC modality for energy efficiency initiatives in public buildings in different cities/municipalities.

C4: Establishment and operationalization of a National Energy Management and Information (NEMIS) and a NEMIS Database.

Outputs:

- 1. Established innovative financing mechanisms.
- 2. Enhanced capacity of local governments in project identification, implementation, and monitoring for energy efficient public buildings across the country.
- 3. Designed and adopted policies and regulations at the state and local levels to support EEPB.

Outcomes

- 1. Supportive legal and regulatory environment to promote energy efficiency in public buildings.
- 2. Innovative Financing Mechanism is adopted and capacity is developed for ESCOs to promote investment in support of EEPB.
- 3. Improved implementation and monitoring of EEPB projects by local governments, including enhanced documentation and knowledge sharing for further replication.

Impact

- 1. Reduced barriers and increased motivators to finance, local capacity, and policy and regulations for EEPB.
- 2. Contributed to the understanding and engagement of local banks in Ukraine so that they offer lending for the ESCOs in Ukraine, leading to energy efficient public buildings that save thermal and electrical energies, fostering sustainable urban development.

2.2.2 Main Stakeholders

The Ministry of Regional Development, Construction, Housing and Communal Services (MinRegion) was originally the central body responsible for formulating and implementing the Government's policy in the field of construction, architecture, town planning, housing and communal services and then replaced by the State Agency on Energy Efficiency and Energy Savings of Ukraine (SAEE). The EEPB project has been implemented under the UNDP Direct Implementation Modality (DIM).

In addition to the primary responsible party, there were three groups of key stakeholders for the EEPB project:

 Government authorities and bodies: Among the government authorities and bodies, the main stakeholder is SAEE which is the Project's Beneficiary, Recipient, and Partner. The Project has strongly collaborated with SAEE, including regular working meetings, constant communication through official and working correspondence. Once SAEE assumed the role of implementing partner, it was decided in a Board Meeting that the Agency would shift to a non-voting⁵ status at the Board Meetings. During the reporting period, the Project also closely worked with the Ministry of Infrastructure in order to deliver the objectives under Component 1. In order to deliver the objectives of Component 2 and develop FSM for ESCO, the Project worked closely with the Ministry of Economy and the Ministry of Finance. In fact, the project contributed to UNDP signing an MoU with the Ministry of Finance.

- *National financial institutions:* The EEPB project had a series of meetings with the Business Development Fund and Ukrainian banks to develop mechanisms and products that are geared to finance ESCO projects.
- Local authorities in small and medium-sized cities: The project regularly worked with local authorities for the implementation of pilot projects. The details of the corporations are described under the findings section for Component 3. The results of this cooperation were regularly communicated in a series of posts about new and successful ESCO contracts.

Table 5: Main Stakeholders for the Project

Main EEPB Stakeholders

The State Agency for Energy Efficiency and Energy Saving of Ukraine

The Ministry for Communities, Territories and Infrastructure Development of Ukraine (Ministry of Infrastructure)

Business Development Fund

GEF focal point from the Ministry of Ecology and Natural Resources of Ukraine

3. Findings

3.1 Project Design and Formulation

3.1.1 Analysis of Results Framework: project logic and strategy, indicators

The Theory of Change (TOC) sufficiently articulated a simplistic and clear pathway for achieving the project's objective "enabling of the transformation of the market for investments in EE in public buildings in the country,"⁶ placing a central emphasis on change pertaining to climate change goals linked to the UNFCCC and particularly on financing to spur national and local energy efficiency and

⁵ PB meeting, February 14, 2024.

⁶ Project Implementation Report 2024

sustainable energy solutions. The TOC posited that investing in renewable energy and local innovations would accelerate, effectively overcoming existing barriers. The core idea being that substantial funding, facilitated by innovative financing mechanisms combined with training for government personnel and educational support for the development of policies on low-carbon development would lead to successful implementation of training and outreach to local users.

The accompanying Results Framework⁷ revealed a particular focus on addressing energy efficiency through the innovative financing mechanisms designed to stimulate policy and financing initiatives. Most, but not all, indicators were aligned with the SMART criteria (specificity, measurability, achievability, relevance, and time-bound aspects). They were generally of quantitative and qualitative nature, but in some cases indirectly measured indicators (i.e. energy savings) posing challenges in measurability.

The project employed a logic model that demonstrated the development challenges (high GHG emissions and pollution, poor quality of urban life and municipal services), immediate cause (outdated urban infrastructure), underlying cause (lack of investment in modernization) and the root causes or barriers, as well as a hierarchy of expected results of the project, from outcomes to overall impact that has been identified in accordance to specific political, regulatory, financial, technical and environmental risks and assumptions.

Outcomes and outputs were consistent with the project strategy focusing on removing the three main groups of barriers related to inadequate access to finance, policy and regulatory framework for EEPB. The project adopted a four-pronged approach aiming to support key energy policy and regulation (Component 1), financial institutions (i.e. the SAEE and BDF) to establish innovative financial mechanisms for EEPB (Component 2); to work at the local level with relevant public authorities to build their capacities to identify, carry out and monitor EE projects (Component 3) and EMIS management (Component 4). Moreover, the project supported design and adoption of policies and regulations to enable EE investment working with relevant public authorities. In addition, the project foresaw the need for national awareness raising and an advocacy campaign securing public support and promoting behavioral changes in energy efficiency in Ukraine.

Broader development and gender aspects of the project were monitored effectively. However, the project implemented a strong Gender Action Plan with its own indicators that were not sufficiently integrated into the M&E system and results framework in particular. There were some indicators on participation for women, but none for other marginalized or vulnerable groups reflecting the project's commitment to LNOB. The Project made important strides in promoting the professional development and advancement of women in a male dominated sector, such as sharing project job opportunities with NGOs such as "Women Energy Club of Ukraine", contracting a number of female experts, such as energy auditors and feasibility studies experts (5 women, 12 men), legal experts (3 women, 3 men), and technical experts (1 woman, 3 men). Although, the project design and Results Framework had limited mainstreaming of gender and LNOB, it did provide a roadmap to better address these

⁷ See Annex L

socio-economic aspects and challenge the norms and current power structures through strategies that would encourage the advancement of women in the field (i.e. women owned businesses or women taking on leadership roles within partner organizations). However, it was lacking in targeting engagement, activities or site selection of other vulnerable groups or those living in poverty.

3.1.2 Assumptions and Risks

Although not specifically articulated in the design, assumptions could be extrapolated from the barriers outlined in the project document. These assumptions generally held true throughout project implementation, even with the unexpected impacts of COVID-19 and the full invasion.

- 1. *Political commitment:* Continued commitment of and cooperation by project partners to support and implement the ESCO model and energy management, including government agencies and municipal authorities.
- 2. *Financial Commitment:* The engagement and support of key private sector institutions (particularly banks) are critical to creating a feasible, innovative financing mechanism for EEPB implementation.
- 3. *Local Government Capacity Building:* Building the capacity of local governments is essential for the identification, implementation, and monitoring of EEPB projects for small and medium sized cities across the country.
- 4. *Policy and Regulatory Framework Adoption:* Collaboration with state and municipal authorities is expected to result in the design and adoption of policies and regulations that facilitate the implementation of the EEPBs.

In relation to the strategy and its implied assumptions, the project document identified a number of risks outlined in the Risk Log⁸, along with planned mitigation measures to address these potential issues during project implementation. Following are the details of these risks that include key underlying assumptions and management responses. An assessment of these risks and measures has been provided in a section related to risk management and effects on project performance.

⁸ Annex 1 of the Project Document.

Table 6: Risks and Counter-measures

Risks description ⁹		Counter-measures/ Management	
Causes	Event	Impacts	Response
If energy system incapacity in the country caused by the war continue to cause regular electricity outages every day during working hours	Then the contractor is unable to work with the server where the system is installed on a daily regular basis	And then the implementation of the prototype of national energy management information system will not be implemented during the duration of the project	Using autonomous power generation
Insufficient credibility of ESCO companies or lack of knowledge of the local authorities	Implemented energy efficiency measures and savings do not meet the set expected targets	UNDP brand image because it acted in support of conclusion of the ESCO contracts	Capacity building activities, workshops, consultations are regularly performed by the project team for local authorities
EMIS is produced by Croatian developers	Ukraine will depend on the procurement of EMIS service for regular maintenance	SAEE may lack capacity to procure maintenance from international developers	Explore the possibility to launch follow-up project to support SAEE
Lack of interest/motivation to work on energy security issues	Significant staff turnover among national partners	Lack of interest to participate in knowledge transfer and information exchange on energy security. National officials don't attend planned capacity building events. No retainment of knowledge and experience.	The Ukraine Country Office will consult with national partners on a regular basis to adjust in a timely manner to potentially shifting priority and interests of the national counterpart.
 There is National System of Energy Efficiency Monitoring in the Law of Ukraine on Energy Efficiency, which is more comprehensive than NEMIS. The Ministry of Infrastructure develop the Unified System in the Area of Buildings which overlaps with NEMIS functions. 	Low political will to introduce National energy monitoring system (NEMIS)	Slow pace of taking important approval decisions and an adequate level of financial and administrative support in creation of EMIS responsible organization.	The Project will spread international knowledge on EMIS implementation among national decision makers through capacity building events and trips to adhere to standards. At the same time, the Project will listen to their preferences and needs to make sure flexibility and country-specific approach can be used.

⁹ Regularly updated by the PMU.

Rapidly deteriorating and highly volatile security situation due to Russia's invasion of Ukraine	UNDP activities are directly impacted by potential air strikes, landmines and UXO, terrorist attacks, and ground combat.	Revision of project implementation plans, delayed or rescheduled activities, repurposing of funds to meet emerging priorities and needs. Impact on partners ability and commitment to execute activities	UNDP will work in close coordination with the national government and local authorities to secure a safe environment for the implementation of the project's activities and working with implementing partners with good knowledge of the local context and effective presence on the ground
In Ukraine, ESCO companies are of a small size, which impacts their bank ability at the financial institutions market. IFC/UNDP FSM designed for municipalities might not be suitable for ESCO companies	FSM might be not suitable for usually small Ukrainian ESCO companies	Unfavorable investment environment, including the law that doesn't let ESCOs operate in the country, and the budget code not amended for multi-year budgeting allocation prevents ESCO companies from implementation of large investment projects	New financial instruments designed for ESCOs to be developed. New models to facilitate investments from the private sector, including private-public partnerships (PPP) and energy cooperatives, green bonds will be developed.
Low purchasing power to acquire technologies of decent quality for municipalities, especially small and medium sized cities. High turnover among government representatives.	Limited experience and access to information on best available technologies and practices among local government officials and ESCO employees	Lack of capacity to work with modern technologies leads to low demand from clients; suppliers may propose outdated solutions and products of poor quality, especially regarding monitoring devices, ventilation and EMIS software	The Project will organize capacity building events and trips for government officials and ESCO employees so that they are aware of the latest technology trends and are able to choose the best solutions for Ukraine.
High interest rates (21-24%) and inflation limits ESCO companies to short term investments on ad hoc basis	Economic situation is unfavorable for commercial financing of energy efficient construction planned by the project	Unfavorable and highly risky business climate makes large-scale investment in EE in Public Buildings in Ukraine using EPC modality rather unattractive for investors	Project will develop models aimed to combine EPC modality for low investments measures with short payback period with large-scale financing from municipalities, international financial organizations and using innovative financial instruments
Rapidly deteriorating and highly volatile security situation due to Russia's invasion of Ukraine	Deterioration of security situations in geographical locations targeted by the project impedes project implementation and impacts the ability to monitor activities through field visits etc.	Further security restrictions and spread of open hostilities in the project targeted areas have direct impact on the geographical coverage of the project activities and sustainability of results	UNDP project team will closely monitor changes in the security environment and will make recommendations to project board on appropriate adjustments to project activities based on different security scenarios

Lack of awareness regarding actual benefits of implementing energy efficiency measures in public buildings and EMIS among public officials	Insufficient awareness of public officials regarding actual benefits of implementing energy efficiency measures in public buildings and EMIS	Reluctance to engage in EMIS activities of the Project	Conduct a study tour for Government' official to raise their awareness regarding actual benefits of implementing energy efficiency measures in public buildings and EMIS
Ukraine uses the state of the art products manufactured according to the requirement of the Ministry of Digitalization. These requirements include the availability of source code and intellectual property rights for the product.	The risk regards the EMIS implementation: technologies may not meet the modern Ukrainian high requirements for digital products for state bodies. And therefore, need to be improved and adapted to local needs.	SAEE may be reluctant to receive EMIS	Transfer NEMIS to SAEE owned enterprise
Focus only on energy saving may lead to deterioration of quality of microclimate inside residential and working spaces	Sanitary norms of public buildings (kindergartens and schools) are disregarded by their administration and employees	Lack of awareness and negligence of requirements for air quality "humidity, temperature, CO2" negatively impacts health and may cause negative attitude toward EE innovations and will lead to increase of capital spending in future	Project's contribution to pilot buildings will include installation of EE ventilation and climate control equipment for school children.
Reluctance of stakeholders to engage in Private investments for renovations in Public Buildings. Expectation for grants.	Lack of interest and participation of stakeholders	Low volume of EPC contracts, slow development of ESCO market	Lessons learnt on advantages of investments in EE through new ESCO models disseminated
Establishing and operationalizing of EE Fund takes longer than expected and is focused solely on residential, not public sector	Low support of energy efficient projects in public sector specifically from the Government	EE measures in public sector receive less affordable financing through credits from EE fund administered by the Ministry of Infrastructure	The Project will focus on other sources of support: municipal EE funds, International Financial Organization (IFO) lending and grants.
Frequent changes in Governmental bodies and their responsibilities	Change in the Government and weakened political will to work on environmental priorities as a result of such change	Lack of political will and institutional capacities to work on environmental priorities	Active dialogue with relevant Government counterparts

If ESCO contracts are concluded without tender procedures under direct contract modality	Then there is a risk of untransparent selection of the contractor or inflated contract	And then there is a risk of overspending of budget funds or reputational risks.	Before concluding such contracts, the Project expert develops a detailed compliance analysis, in particular:
	price.		- of the facility of energy service for the possible achievement of 50% or more energy savings in case of implementation of EE measures under the ESCO contract;
			 of the energy service provider for compliance with the criteria (in particular, the available experience in the implementation of EPC with actually achieved and confirmed energy savings of 50% or more; The project develops the digital tool – calculator of the EPC contract depending on the selected EE measures which will help the requestor to verify the offered contract price.
If solar power plants under ESCO modality need to be installed on the ground near water facilities	Then there may be legal or administrative barriers regarding the right to the land and conditions of the projects	And then the projects risk failure to install the solar power plants	The project received a legal opinion regarding the possibility of installation of the ESCO SPP in water facilities

3.1.3 Lessons from other relevant projects (e.g. same focal area) incorporated into project design

EEPB was designed to further existing partnerships with UNDP and the State Agency on Energy Efficiency & Energy Saving of Ukraine and the Ministry of Infrastructure by building the capacity of national and city institutions in operationalizing the ESCO mechanism, establishing the EMIS, and expanding the database to cover all types of city facilities and resources using (NEMIS).

As the EEPB project was being designed, there were 5 on-going climate change projects funded by GEF in Ukraine. Two of the projects dealt with renewable energy (UNDP: Development and Commercialization of Bioenergy Technologies in the Municipal Sector in Ukraine; EBRD: Creating Markets for Renewable Power in Ukraine), sharing the common intention of reducing GHG emissions, although there was no specific connection in implementation. The third project (UNDP: Transforming the Market for Efficient Lighting) was directly relevant to EEPB, as energy efficient lighting was expected to be a component in a package of measures aimed at implementing energy efficiency measures in public buildings. Two other synergistic efforts were the UNDP GEF Commercialization of Bioenergy Technologies in Ukraine, working with IFC in the design of a financial support mechanism for renewable energy projects in Ukraine, and a partnership with the Business Development Fund initiated by KfW Germany and developed under the EEPB project where a lending financial mechanism was established. Other lessons were considered in the project design, including USAID supported projects.

3.1.4 Planned stakeholder participation

UNDP was the Implementing Partner for this project by employing the Direct Implementation Modality (DIM) and has been responsible for managing the project, including the monitoring and evaluation of project interventions, achieving project outcomes, and effectively utilizing UNDP resources. A Project Board was established to provide a forum for key government stakeholders to be actively involved in the guidance and oversight of the project.

The collective and collaborative efforts of all parties involved were critical for the success of the EEPB project given its magnitude and significant obstacles. The list of participants at the Project Board Meeting (PBM) confirmed the effective engagement of stakeholders and decision-makers from: (i) GoU, including SAEE, (ii) Parliament representatives; (iii) UNDP and RTA; and (iv) implementing Partners. The PBM in 2017 involved 20 participants, the second PBM in 2018 involved 26 participants, the third in 2021 involved 11 participants, the fourth in 2022 involved 17 participants, the fifth in 2023 involved 30 participants and the most recent in 2024 involved 27 participants. This level of participation demonstrated enhanced interest and engagement of key stakeholders.

Small and medium cities, as well as ESCO SMEs, were central in the design for delivery mechanisms for the EEPB projects' implementation. They were considered the key drivers for ESCO market transformation, such as interventions switching from coal or oil to solar or other types of renewable energy and improved energy efficiency.

3.1.5 Linkages between project and other interventions within the sector

There were mainly four relevant initiatives working in the area of energy efficiency in public buildings that were not involving GEF.

- 1. *The Legal Energy Infrastructure project,* implemented by the EBRD, started in August 2013 and was resourced with \$22.5 million USD. The EBRD infrastructure project was a first step in the longer-term process of EBRD efforts to develop a private sector led and financed ESCO/EPC market in Ukraine.
- The Energy Efficiency in Municipalities Project was implemented by GIZ (2013 2018) to support municipalities in different parts of Ukraine on how to introduce appropriate energy management. One focal area of the project was the development of energy management systems. The consortia are in Dnipropetrovsk (4 municipalities), Chernivtsi (2 municipalities) Luhansk (4 municipalities), Poltava (4 municipalities) and Zhytomyr (3 municipalities).
- 3. The Municipal Energy Reform Project was managed by USAID and started its second phase in October 2013 to support the introduction of energy management and energy metering systems in various cities in Ukraine. Its goal was to establish one nationwide energy management information system (EMIS) adopted for all public buildings in Ukraine, one national database of energy consumption in public buildings and one system of monitoring and reporting. USAID supported energy management systems in selected cities but not a nationwide system. An important criteria for the UNDP GEF EEPB project was to select cities that were not engaged with this USAID project, so as not to duplicate efforts and provide a broad impact.
- 4. *The Sustainable Energy Finance Programme in Ukraine Project* was implemented by the IFC with approximately \$471 million USD available for lending to sustainable energy related activities.

3.1.6 Gender responsiveness and social inclusion of project design

Gender was defined as an important cross cutting theme for the EEPB project. Although the project affected communities as a whole, the project design took into consideration the differences in impacts on women and men. The project utilized a multi-dimensional approach that included social transformation and changes in production patterns and technologies, such as recognizing the differences women and men have in terms of energy needs and how that influences the ability to reduce GHG emissions. The project planned to facilitate gender mainstreaming by disaggregating key monitoring data on female participation, developing and implementing strategies and policies to close the gaps between women and men, and holding individuals and institutions accountable for outcomes that promote gender equality.

The project design included learnings about the EMIS from South-South Triangular Cooperation (SSTC) with the UNDP-GEF Energy Efficiency Project in Croatia and Latvia. Additional ways that SSTC was envisioned was through bilateral knowledge exchanges and technology transfer with other UNDP-GEF projects in the region, knowledge sharing across UNDP and GEF SC IAP and its GPSC

globally, engaging with information exchange platforms that promote sharing results and lessons learned.

3.1.7 Social and Environmental Safeguards

The project completed the social and environmental screening procedure, ¹⁰ which ensured that the project complied with UNDP Social and Environmental Standards outlined at that time.¹¹ According to the project document, the Environmental Impact Assessment (EIA) was not required given the type and scale of EE investments along with sufficient laws on environmental procedures, as long as regulations ensuring proper environmental procedures are followed at the state and local levels. However, it should be noted that EE related interventions and activities in the building sector were not subject to EIA and did not require the issuance of environmental permits for such projects. Only thermal modernization and some kinds of solar projects (where digging into the ground was foreseen) require specific permits. For these kinds of projects, ESCO-companies submitted an application to the State Inspection of Architecture and Urban Planning of Ukraine for obtaining a permit to start construction work. According to the terms of all ESCO contracts, "The quality of performance of works must comply with state building regulations and rules, standards, technical conditions and other regulatory documentation that determines the quality requirements for this type of work¹²".

The social and environmental screening resulted in an overall moderate score with two major risks:

- All the pilots are procured by the municipalities via the national Prozorro procurement system and managed by the cities directly. ESCO-companies followed all the requirements according to the national legislation. In addition, thermal modernization occurs in the non-heating summer period, so it does not disturb the operations of the public facilities as well as the projects of street lighting and solar power installations.
- Regarding hazardous waste, all energy efficiency measures performed by ESCOs do not involve major retrofitting, they only install equipment in the cellar. The EEPB had some projects with complex thermal modernization (wall insulation, replacing windows), but these measures were performed by the cities, not ESCOs, so the process was managed by the relevant government offices.
- Climate-related risks, such as increased temperatures, may impact the project's implementation and effectiveness by increasing or decreasing energy demand, increasing flooding, limiting water availability, or increasing the frequency and intensity of heatwaves, or other events. The experts anticipated that, although higher temperatures may decrease heating demands, summers will then have increased energy demands for cooling, as well as varying or unpredictable temperatures will benefit from a metered and automatically controlled system. Therefore, these EEPB interventions were still expected to be beneficial.

¹⁰ EEPB, Social and Environmental Screening Template (November 16, 2021)

¹¹ UNDP Social and Environmental Standards, updated, effective January 2021.

¹² Official statement of the Project Manager, September 18, 2024.

No adverse social impacts were anticipated, since the project focused on EE of public buildings within their existing footprint and land possession. In addition, there would be no resettlement of community members. If any environmental or social grievances did arise, there was a mechanism in place for reporting them to the GEF through the annual PIR. At the writing of this report, no data was available to the evaluation team about the use of this mechanism.

3.2 Project Implementation

3.2.1 Adaptive management

The project encountered numerous complex and extraordinary challenges throughout its implementation. The nature of the structure within Ukraine, the EEPB project suspension, frequent change of executive governments, responsibilities on different administrative levels as well as the frequent turnover of project team staff required significant effort and adjustments when negotiating agreements, approvals and an extension for maintaining the continuity of the project. The global crises with COVID, full scale war in Ukraine and inflation also had a significant impact on the first and last years of the project.

UNDP was highly adaptive in its management of the project. In response to the results of the Midterm Review (MTR) and changing context as a result of the global crises, the project duration was extended to better meet the needs of the project after suspension.

The team has accomplished an impressive amount in the first year and second half of the project period. The following are the main challenges and how they were addressed.

- Project team: almost complete replacement and expansion of the project team after the suspension of the EEPB project, consumed a lot of time and resources to fit the needs of the project and significantly enhanced implementation once it's done.
- The project suspension, post COVID restrictions and full scale war in Ukraine: some project activities, pilot projects and training curricula were redesigned, as well as project sites were replaced. The Project signed MoUs with new partner cities after its suspension because some of the former partners were occupied. Consultation with communities on ways to attract investment in response to the national budget's reduction for EE during full scale war as well as establish regular online communication with the partners to best support them. Adding a new ESCO modality in response to changing needs within the country.
- Inflation: due to adjustments in the ESCO contracts (7,5%)¹³, which took approximately one month for approval each time, slowed progress on implementation of ESCO contracts or selection of ESCO pilot projects.

Stakeholders agreed across all groups that UNDP provided a significant added value to these efforts. First and foremost, stakeholders highly valued UNDP's ability to provide the capacity and expertise

¹³ <u>https://tradingeconomics.com/ukraine/inflation-cpi</u>

to creatively resolve complex and time-consuming government processes and procedures. There was also a high value placed on UNDP's ability to maintain quality and motivate regular inputting of data to EMIS. In addition, there was appreciation and value placed on UNDP's overall contribution to the development of NEMIS.

Stakeholders valued UNDP's ability to negotiate impasses or details that stakeholders were not able to resolve on their own to complete an intervention (i.e. specific ESCO procedures and requirements). UNDP's approach felt inclusive and collaborative with stakeholders, which more government officials noted was a welcome difference.

3.2.2 Actual stakeholder participation and partnership arrangements

Stakeholders were engaged through participation in the Project Board (representatives of the Ministries and the State Agencies), consultations and active involvement in implementation of project activities (e.g. Municipalities and Cities signed letters for co-financing, small and medium cities participated in preparation of SECAPs, and were engaged in preparing relevant legislation and implementing activities.

The most significant collaboration was through the key governmental counterparts actively involved on the Project Board: The State Agency for Energy Efficiency and Energy Saving of Ukraine; The Ministry for Communities; Territories and Infrastructure Development of Ukraine (Ministry of Infrastructure); Business Development Fund; and the GEF focal point from the Ministry of Ecology and Natural Resources of Ukraine.

This close collaboration from the project's design through implementation, strengthened governmental commitment to ensure the project's success and governmental knowledge to facilitate the continuation of the project's efforts. For example, cooperation with state level institutions responsible for energy efficiency has been further formalized through the establishment of the GEF focal point at the Ministry of Ecology and Natural Resources of Ukraine. The main topics for discussion and joint decision-making within the Project Board were related to the establishment of financial mechanisms, the development of an IT system for NEMIS and the improvement and development of the legislative framework for the ESCO concept. As witnessed by the progress in its components, consultations were time consuming with mostly successful results.

According to information gathered from interviews with stakeholders, the contextual situation in Ukraine is broader with a large number of stakeholders from the local and state levels who believe the country would benefit from expanding similar engagement in energy efficiency.

Given the strong desire by municipalities to improve energy efficiency in their areas, municipal officials and staff were critical stakeholders who were eager and active in ensuring the project was successful for their communities. They demonstrated their commitment to participating in project activities with signed commitment letters, significant co-financing (in-kind) of EE projects, and participation in preparation of SECAPs, and the implementation of EEPB project activities, such as local ESCO interventions.

Similarly, local governments were directly involved with the planning of a large number of ESCO projects in the future. Specifically, regarding stakeholder engagement, the project established the partnerships¹⁴ that implemented EE and energy management projects together with ESCOs as per the agreement in the signed MoUs with: Dubno, Borodyanka, Savran, Drohobych, Slavutich, Odessa, Korosten, Nizhyn, Yuzhnoukrainsk, Chornomorsk, Kaniv, Obukhiv, Zviahel, Khmelnytsky, Novovolynsk, Kryvyi Rih, Vinnytsia, Lviv, and Pervomaiskii. More specifically, activities related to EMIS were conducted in 10 locations (Fastiv, Chortkiv, Khotyn, Dobropillia, Druzhkivka, Selydove, Sloviansk, Dubno, Bila Tserkva, Rivne); 1 NEFCO project (Kaniv); 1 Energy managers school (Poltava); and other measures, such as survey responses, were conducted in 9 cities or municipalities (Drohobych, Slavutich, Odessa, Yuzhnoukrainsk, Zviahel, Novovolynsk, Cherkasy, Kryvyi Rih, Vinnytsia).

In accordance with the information gathered from interviews with stakeholders, the situation in Ukraine is complex but controlled, with a large number of stakeholders and covering a large field of engagement: energy. The energy sector in Ukraine is under continual threats and significantly damaged, with frequent blackouts. The importance of implementing these kinds of independent energy generation is a high priority for the community.

Small and medium cities, as important stakeholders, were committed to participate in the project activities with signed MoUs for the project's implementation and the city's participation in preparation of SEAPs (11 SEAPs). Six partner cities and municipalities that invested in the implementation of planned EE and energy management initiatives in their SEAPs realized pre-feasibility studies and concluded ESCO-contract (installation phase) (Khmelnytskyi, Zviahel, Lviv, Yuzhnoukrainsk, Nizhyn, Kyiv (SCMU)), while savings were already being demonstrated in 5 cities where pre-feasibility studies were conducted and ESCO-contracts concluded (Drohobych, Korosten, Pervomaiskyi, Chornomorsk, Kryvyi Rih).

3.2.3 Project finance and co-finance

The project has achieved expectations for co-financing. In Ukraine there are relatively low levels of activities related to energy efficiency development and the ESCO market did not exist prior to this project, meaning every result in building this ESCO market was a significant and innovative contribution.

It is expected that all of the ongoing investments for the ESCO projects in Ukraine, including the planned investments through ESCO public procurement and other types of planned EEPB

¹⁴ Project Implementation Report (PIR), 2024.

investments, will be realized by the end of the project. This will bring the project facilitated EEPB investments to 788,838,147USD, which is above the end of project target.

Resources for small and medium cities and the Business Development Fund were based on annual budget decisions, which can be subject to major changes as a result of political changes and/or increased budget constraints. To mitigate this uncertainty, support was provided to the BDF to diversify and strengthen their funding base.

The impact of the full scale war, as well as the COVID-19 pandemic, were other factors that added to the financial uncertainty for funds from both municipalities and the Government of Ukraine to invest in the EEPB projects. For instance, the Government of Ukraine established a BDF prior to the EEPB project, which is a sufficient institution to support future ESCO investment.

The project's gradual approach to implementing an intervention in adaptive stages helped to mitigate the impact of this shift in resources, i.e. the project first gathered the necessary background information from feasibility studies or technical papers that helped to develop a plan for each site. By doing so, the project created time for small and medium cities to plan according to their priorities and current circumstances. The following tables summarize the available and utilized financial resources.
Table 7: Total Project Funding Table¹⁵

	UNDP (USD \$)	 Government including \$) municipalities (USD \$) 		Donor Age (USD \$)	ency	International Donor (USD \$)		Private Donor (USD \$)		Total (USD \$)		
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grant/ Loans/ Concessions	900,000	200,000	-	-	5,480,000	5,480,000	25,42,779	32,372,302	-	-	31,804,779	38,052,302
In-kind	-	-	13,348,416	228,689,115	-	-	-	-	17,000,000	522,096,730	30,348,416	750,785,845
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total	900,000	200,000	13,348,416	228,689,115	5,480,00	5,480,000	25,424,779	32,372,302	17,000,000	522,096,730	62,153,195	788,838,147

¹⁵ Data provided by the UNDP Finance Unit. (October 10, 2024)

Source of Financing	Name of Co-financer	Type of Financing	Investment Mobilized	Amount (in USD)
Donor Agency	GEF	Grant Public Investment	Investment Mobilized	5,480,000
Municipalities	Municipalities investment in project among 53 ESCO pilots	In-Kind	Investment Mobilized	1,500,000
Government	The State Agency for Energy Efficiency and Energy Saving of Ukraine	In-Kind	Investment Mobilized	227,189,115
International donor	GIZ - Energy Efficiency in Municipalities	Grant	Investment Mobilized	4,424,779
International donor	GIZ - Energy Efficiency in Municipalities II	Grant	Investment Mobilized	4,947,523
International donor	IFC - Ukraine Residential Energy Efficiency Project	Grant	Investment Mobilized	6,500,000
International donor	USAID - Municipal Energy Reform Project	Grant	Investment Mobilized	16,500,000
Private financing	Kominbank	In-Kind	Investment Mobilized	1,540,000
Private financing	NEFCO	In-Kind	Investment Mobilized	800,000
Private financing	European Investment Bank	In-Kind	Investment Mobilized	443,310,000
Private financing	ESCO companies within 642 energy service contracts	In-Kind	Investment Mobilized	76,446,730
UNDP	UNDP	Grant	Investment	200,000

In-Kind

Public-investment

Mobilized

Table 8: Project Financial Statement (2017-2024)¹⁶

¹⁶ Data provided by the UNDP Finance Unit. (September 17, 2024)

Total financing	788,838,147

The SAEE financially participated in these activities so that the financial burden would be shared among the SAEE, donors, private financing and the selected municipalities (66 ESCO projects implemented and 50 more signed). Most of the financial resources were utilized by private investors, while Letters of Agreement were signed with local government institutions for implementation of a number of output-related activities.

As discussed, the project had some major challenges with co-financing due to a variety of reasons, including the reallocation of the funds due to full scale war. However, it is expected that all of the ongoing investments will be achieved. This will bring the project facilitated EEPB private investments¹⁷ to approximately 500 million USD, which is above the end of project target.

3.2.4 Monitoring & Evaluation: design at entry, implementation, and overall assessment of M&E

The results, as outlined in the project results framework, have been monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results, as well as an in-depth audit in response to the suspension.

Project-level monitoring and evaluation have been undertaken in compliance with UNDP and GEF M&E requirements. In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management were agreed during the Project Inception Workshop and detailed in the Inception Report. This included the exact role of project target groups and other stakeholders in project M&E activities.

Given the unusual circumstances regarding the project's suspension, a detailed internal review¹⁸ was conducted and concerns were resolved. The project review began in November 2019 and was completed in early 2021. The objective of this review was to understand and assess the project's active and planned activities. It covered all aspects of the project's implementation and management to better understand how the project was being implemented from the start of the project until its suspension. The main finding of the review was that the project remained relevant and energy efficiency remained a major challenge for Ukraine, especially in the public sector. The other finding was that the project design was fundamentally sound and that the project had already made a significant positive contribution to the improvement of energy efficiency in public buildings. There

¹⁷ Project Implementation Report, 2024.

¹⁸ Report on Activities of the Pre-Start Phase, 1 January to 11 August 2021. Annex: Minutes of the Project Board Meeting, April, 2021.

were no findings of any irregularities. However, being overly cautious, UNDP introduced changes in procurement to enhance project oversight.

M&E Oversight and monitoring responsibilities

Project Manager: The Project Manager was responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Manager ensured that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Manager developed annual work plans (last one for 2024) based on the multi-year work plan.

Project Board: The Project Board applied corrective action as needed to ensure the project achieves the desired results.

Project Implementing Partner: The Implementing Partner was responsible for providing any and all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary and appropriate.

UNDP Country Office: The UNDP Country Office supported the Project Manager as needed, including through annual supervision missions. The UNDP Country Office initiated and organized key GEF M&E activities including the annual GEF PIRs, the independent mid-term review (2019) and the independent terminal evaluation (2024). The UNDP Country Office also ensured that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality.

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

- During the **MidTerm Review** (MTR) period, the project started on December 14, 2016 and was in its fourth year of implementation. In line with the UNDP-GEF Guidance on MTRs, the MTR process was initiated before the submission of the second Project Implementation Report (PIR). The MTR process followed the guidance outlined in the document *Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects.*
- An independent **Terminal Evaluation** took place upon completion of all major project outputs and activities (September 2024). It was important that the terminal evaluation process started at least three months before operational closure of the project allowing the evaluation mission to proceed while the project team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability.

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

Table 9: M&E Rating

Monitoring & Evaluation	Rating ¹⁹	Remarks
M&E design at entry	Satisfactory	The project document has outlined suitable M&E measures
M&E Implementation Plan	Satisfactory	Project employed suitable mechanisms to implement M&E Plan
Overall Quality of M&E	Satisfactory	Project Board, Project team, UNDP Country Office /M&E specialists, UNDP-GEF Unit

3.2.5 UNDP implementation/oversight and Implementing Partner execution, overall project implementation/execution, coordination, and operational issues

The project was implemented following UNDP's Direct Implementation Modality (DIM), according to the Standard Basic Assistance Agreement between UNDP and the Government of Ukraine (SBAA of 18 June 1993), and the Country Program Action Plan (CPAP). The Implementing Partner for this project has been UNDP. The Implementing Partner was responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources. The project organization structure was as follows.

The Project Board was responsible²⁰ for making by consensus, management decisions when guidance is required by the Project Manager, including recommendation for UNDP/Implementing Partner approval of project plans and revisions. In order to ensure UNDP's ultimate accountability, Project Board decisions should have been made in accordance with standards that shall ensure management for development results, best value for money, fairness, integrity, transparency and effective international competition. In case a consensus cannot be reached within the Board, final decision shall rest with the UNDP Program Manager.

The Project Manager managed the project on a day-to-day basis on behalf of the Implementing Partner within the constraints laid down by the Board. The Project Manager function will end when the final project terminal evaluation report, and other documentation required by the GEF and UNDP, has been completed and submitted to UNDP (including operational closure of the project). There were issues with project management in the first years of the project, one of the most impactful being the turnover with a total of two (2) project managers over the course of the project period.

¹⁹ Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight & Execution, Relevance are rated on a 6-point scale: 6=Highly Satisfactory (HS), 5=Satisfactory (S), 4=Moderately Satisfactory (MS), 3=Moderately Unsatisfactory (MU), 2=Unsatisfactory (U), 1=Highly Unsatisfactory (HU). Sustainability is rated on a 4-point scale: 4=Likely (L), 3=Moderately Likely (ML), 2=Moderately Unlikely (MU), 1=Unlikely (U)

²⁰ Project Board meetings minutes (6); ProDoc.

Project Assurance was provided by the UNDP Country Office, particularly offering support and guidance. Additional quality assurance was provided by the UNDP Regional Technical Advisor as needed, with consensus by evaluation participants that this was sufficiently conducted.

The Governance for project target groups included the ministries and the agencies (The State Agency for Energy Efficiency and Energy Saving of Ukraine, The Ministry for Communities, Territories and Infrastructure Development of Ukraine (Ministry of Infrastructure); Business Development Fund; GEF focal point from the Ministry of Ecology and Natural Resources of Ukraine in EEPB, as target groups had a direct role in governing and project management through their involvement in the Project Board.

Project Implementation Partners and Stakeholders

- Small and medium cities authorities were important stakeholders in the process of leveraging investments for EEPB, thus making them an important target group of the project. Therefore, it was determined that authorities of selected small and medium cities would not be involved in the Project Board, though they could add valuable local knowledge and experience related to the prescribed procedures for implementing EE measures in Ukraine.
- ESCO SMEs, energy companies, and banks and funds as delivery agents in the EE market contributed to the project's success through their technical knowledge and specific local experience and interests in the ESCO scheme.
- All target groups had a valuable role in supporting Ukraine-wide advocacy campaign on energy efficiency, through their capacity to endorse and disseminate information.

The Project Unit has been based at the UN House in Kyiv. Implementation of project activities was fully supported by the Energy & Environment Sector Leader and Energy Environment Program Associate, as well as other program staff.

During the TE, the Project Unit consisted of the Project Manager, Energy Efficiency Policy Analyst, Project Analyst -Energy Efficiency Investment, ESCO Engineering Analyst, Energy Management and Monitoring Analyst, M&E and Communication Officer, Project Associate, and Programme Analyst (2016-2023).

The UNDP Country Office provided services for operational segments to support a successful project implementation. The GEF logo and UNDP logos appeared on all promotional materials, other written materials, and project hardware. Project activities related to cooperation, training and information sharing aimed to use already established, legitimate participatory bodies, as well as existing training and cooperation platforms.

Implementing Agency (IA) Implementation & Executing Agency (EA) Execution Rating	Rating ²¹	Remarks
Quality of UNDP Implementation/ Oversight	Satisfactory	UNDP's Environment and Climate Change Unit was involved in all stages of the project design, implementation and monitoring and evaluation.
Quality of Implementing Partner Execution	Satisfactory	The project was DIM, with UNDP as the implementing agency, using UNDP standard financial management, recruitment and procurement systems and procedures. Although there were management issues in the first half of the project period (before the suspension), UNDP addressed the issue with the necessary changes to ensure quality implementation.
Overall quality of Implementation/ Execution	Satisfactory	UNDP provided effectively required technical, implementation, financial management, recruitment and procurement support during project implementation.

3.2.6 Risk Management

As mentioned in Section 3.1.2, the project document identified a number of risks articulated in its Risk Log²². The following is a summary assessment of those risks and their effects on the project implementation and performance.

Political: Lack of political will to adopt a necessary policy and legal/regulatory framework. By the project document, this issue is of concern. There were several draft laws that have been formulated by the Ministry of Infrastructure, with the support of the donor community. Although there is political will to pass these laws, they are awaiting approval by the Verkhovna Rada as they address more pressing priorities due to the full scale invasion.

Another political risk that is outside the control and due to the full scale war, is that investment has become attractive due to the instability of the armed conflict. During this emergency situation in Ukraine, the project had full political and governmental support, as well as acceptance by the beneficiaries. The SAEE provided its support to the project and designed the draft plan covering legislative improvements, creating the national energy monitoring system, organizing roundtables and seminars on ESCO in municipalities, and other activities within the framework of EEPB.

²¹ Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight & Execution, Relevance are rated on a 6-point scale: 6=Highly Satisfactory (HS), 5=Satisfactory (S), 4=Moderately Satisfactory (MS), 3=Moderately Unsatisfactory (MU), 2=Unsatisfactory (U), 1=Highly Unsatisfactory (HU). Sustainability is rated on a 4-point scale: 4=Likely (L), 3=Moderately Likely (ML), 2=Moderately Unlikely (MU), 1=Unlikely (U)

²² Annex 1 of the Project Document.

Institutional: Apprehension that the likelihood of a programme for energy efficiency in buildings may not take off. The Ministry of Infrastructure (later SAEE) was fully committed to implementing energy efficiency measures in all buildings in Ukraine, irrespective of old and new ones.

Technology failure: Energy Efficiency measures/technologies for the buildings sector were generally well known and were widely used in the rest of the world, including in neighboring EU countries. The project was designed and implemented to identify, transfer and adopt best available energy efficiency technologies and practices in Ukraine.

Environmental/ Climate Change: Coal, gas and oil constituted 78% of the country's total energy supply in 2012 and any environmental or climate change has little effect on this energy supply mix, although the share of each energy source may be subject to change. However, implementation of energy efficiency measures have seen a positive effect on the total amount of this energy being utilized during full scale war, blackouts and emergency situations in Ukraine, resulting in a decrease in GHG emissions.

Financial: Lack of commitment from the private and public sector to invest in energy efficiency in public buildings and for banks in Ukraine to lend for ESCO type activities. As early as in the project design stage, several potential investors signified their interest and commitment to invest in energy efficiency in public buildings, which created a conducive investment environment, including the law allowing ESCOs to operate in the country and the budget code be amended to allocate for multi-year budgeting.

Insufficient information: Insufficient Information and Awareness of Public Officials on actual benefits of implementing energy efficiency measures in buildings. The project developed the majority of a nation-wide Energy Management Information System (EMIS) and has supported its implementation for public buildings in the country, which continues to be in-progress.

3.3 Project Results and Impacts

3.3.1 Progress towards objective and expected outcomes

The following table provides a summary²³ of achievements towards the project objective and outcomes against specified indicators and targets as outlined in the project's Results Framework. The following sections on Relevance, Efficiency, Effectiveness, Sustainability, Gender Equality and Impact will provide a detailed analysis.

²³ Project Implementation Reports (PIRs), as of June 30, 2024..

Table 11: Results Framework Summary²⁴

OBJECTIVE: Enabling the transformation of the market for investments in EE in public buildings in the country.								
Description of Indicator	Baseline Level	Midterm target level	End of project target level	Evaluator remarks	Target achieved			
Cumulative GHG emission reductions (in tCO2 over 20-yr timeline) from the public buildings sector of the country.	0	(not set or n/a)	8,893	Actual cumulative direct GHG emission reduction as of June 2024 for ESCO pilots is 16,052.48 tCO2e, almost double the end of project target; with estimated reduction over a 20-year period – 69,190.0 tCO2e. ²⁵	Target surpassed.			
Cumulative volume of investment in energy efficiency in public buildings (US\$ million)	0	(not set or n/a)	21	 Current cumulative value for this indicator is \$22.92M. Current value for the indicator is \$22.92 mln (\$4 mln investment from 24 new pilots in July - September 2024) in addition to \$18.92M reported in last PIR.²⁶ As of June 30, 2024: \$12.5 mln investment in energy efficiency from 39 EPCs that were concluded with the support from the project. Previous reporting periods: \$3.7 mln investment under 53 EPCs concluded with the support from the project. Among them: \$2.2 mln invested by ESCO, and 1.5 mln USD investments by communities under 11 enhanced-EPC (among these 53 EPC-pilots). 	Target achieved.			

$^{\rm 24}$ For more details, see Annex N.

²⁵ As indicated in Annex O.

²⁶ As indicated in Annex L.

				 \$1.54 mln USD (UAH 41.6 million) volume of credit by the bank and \$1.18 mln USD (32 million UAH) invested by ESCOs between 2019, 2020 and 2021 according to data obtained from ComInBank, within the ESCO Factoring mechanism, designed by this project, the bank financed 192 EPC. Due to the invasion and volatile situation on the market no new loans were issued using the ESCO Factoring mechanism during the reporting period. However, the project has developed a banking product and plans to present it to Ukrainian banks in the second half of 2024 to facilitate investments in energy efficiency through ESCO. Indirectly cumulative 76.4 mln. USD (2.2 billion UAH) – via 648 EPCs for investments channeled, through the ESCO modality into the public buildings. according to the national procurement system BI Prozorro, since the project supported the ESCO market by introducing ESCO legislation up to the end of June 2024. UNDP in Ukraine with the support of the project has signed a responsible party agreement with the Business Development Fund for the establishment of an ESCO-Fund, as well as letter of agreement with the State Agency on Energy Efficiency and Energy Savings of Ukraine to support the Decarbonization Fund of Ukraine that will facilitate loans for ESCO companies. The project estimates around \$2-3 mln of direct investments through these new mechanisms for up to 15 new EPCs. 	
Cumulative energy saved from installed energy efficiency systems in public buildings (MWhe/ MWhth).	0	(not set or n/a)	2,346	As of June 2024, 24,164.16 MWh were saved cumulatively since the Project start.	Target surpassed

Cumulative	(not set	(not set	3,000	The total for this indicator as of June 2024 is 4,562: 1,003 green jobs (energy	Target surpassed
number of green	or n/a)	or n/a)		managers in municipalities) were created in 2018-2019.1,619 green jobs in Odessa	
jobs created in				city, Rivne, and Kirovohrad regions were created due to procurement of energy	
the public				management systems for public buildings in these regions.	
buildings sector				A series of 40 webinars on energy monitoring and energy management was held	
of the country.				to train these energy managers in June – September 2022, where among those who	
				received certificates 56% were men and 46% women. 1,055 green jobs (energy	
				managers in municipalities) were created in 2022 through a series of 10 webinars	
				on energy management in public buildings in communities that was held in	
				September – October 2022. Among these 1055 newly trained energy managers	
				who received certificates 54% are men and 46% women.821 green jobs (energy	
				managers in municipalities) were created through a series of webinars that was	
				held in December 2023. Among the 821 newly trained energy managers who	
				received certificates 46% are men and 54% women. 64 green jobs (trainers for	
				energy auditors in buildings and technical designers) were created through a series	
				of webinars held in February – April 2024. Among the 64 certified participants	
				64% men and 36% women.	
				The project has started procurement for an online course on energy management	
				and the course is scheduled to be held in the second half of 2024. The results will	
				be reported in the next reporting period .	
OUTCOME 1					
Component 1: Fo	ormulation	and introd	uction of	a streamlined and comprehensive legal/regulatory, and policy framework for prom	noting energy efficiency
in public building	gs. / Outcor	ne 1: Cons	istent effe	ctive enforcement of a streamlined and comprehensive policy, legal and regulatory	frameworks to promote
and support ener	gy efficien	cy in publi	c building	(S.	
Description of	Baseline	Midterm	End of	Evaluator remarks	Target achieved
Indicator	Level	target	project		
		level	target		
			level		
Percentage	19	190	500	For this newly introduced indicator, the project conducted the study, prior the	
increase in the				TE, to design a methodology to determine the indirect impact of project supported	Target achieved
number of	1			legislation.	
EE&EM projects					
in public					

buildings that		The specific repost was obtained from the expert. It was estimated that 644% of	
are facilitated by		EE&EM projects increase was defined in new energy management and ESCO	
the approved		projects in Ukraine since the Project started.	
and effectively		In this reporting period, the project produced reports to promote new ESCO	
enforced policies		mechanisms as well as promote lessons learned from implemented ESCO-projects,	
and laws/regulations		disseminated the reports on the project website, UNDP Ukraine website, as well	
that promote		as via social media and email newsletters:	
and support		- "Performance assessment of pilot ESCO projects in partner cities. Successful	
EE&EM and EE		experience of the implementation of ESCO projects."	
technology and		- "Pre-feasibility studies for the implementation of the SPP (solar power plant)	
measures		model through the ESCO modality.	
applications.		As of June 30, 2024, the Covernment approved an important secondary	
		As of sure 50, 2024, the Government approved an important secondary	
		legislative act, developed by the project – Decree of Cabinet of Ministers	
		№382 from April 2, 2024 (changing the Decree №1178). These changes	
		remove one of the barriers to ESCO development which is unreasonable	
		baseline calculations, thus creating favorable opportunities for	
		implementation of ESCO projects by affecting the calculation of the energy	
		consumption baseline for ESCO projects, introducing 3 different scenarios	
		and providing more opportunities for complex energy modernization of public	
		buildings where baseline is affected by the war, Covid-19, or other factors.	
		In August – September 2023 in order to clarify and promote the provisions of the	
		legislation, approved by the Government on June 19, 2023, to the energy service	
		procurement procedure, which will be effective during a state of war plus 90 days,	
		the project conducted a series of online webinars for the representatives of the	
		Ministry of Internal Affairs, –Ministry of Economy, Ministry of Justice, National	
		Academy of Sciences of Ukraine, State Emergency Service of Ukraine, Cities and	
		76% men)	
			1

				As of June 30, 2024,, the project has developed and submitted to the governmental partners the following documents in order to promote ESCO and energy management legislation: - comments regarding amendments to secondary legal act on energy management; - comments regarding amendments to secondary legal act on National database on energy performance of buildings; - comments regarding draft of professional standard on energy audit of buildings; - draft concept of the tool for national energy efficiency monitoring system; - analysis on implementation EEO scheme in Ukraine, which currently presented as policy would be monitored within national system of monitoring of energy efficiency but still not introduced according to current provisions of Law on energy efficiency - analysis for the State Agency on Energy Efficiency and Energy Savings of Ukraine (SAEE) on provisions at EU acquis regarding conducting energy monitoring and reporting.	
No. of cities/municipali ties that develop and implement approved SEAPs	0	10	50	The number of cities/municipalities that were directly supported by this project to develop and implement approved SEAPs as well as preliminary feasibility studies is 26 since the start of the project, and 4 cities solely in this reporting period. The total number of eligible project supported interventions (SEAPs and preliminary feasibility studies) during 2017-2022 is 79. In addition to 38 pre-technical design documents in the previous period, the project in the reporting period conducted 22 more pre-technical design documents for solar power in hospitals and water facilities and 2 cities with pre- technical design documents for autonomous heating in 8 pilots. In the reporting periods the project continued to support cities with SECAPs (Sustainable Energy and Climate Action Plans) based on partner's needs and consequences of 2023-2024 autumn-winter season. In 2024, the project developed sections on energy balance and energy efficiency measures for SECAPs in Koziatyn, Kremenchuk, and Kryvyi Rih. The same activity is planned for Berezhany for the next reporting period.	Target partially met

No. of cities/municipali ties that officially adopt and implement energy management plans	0	10	20	According to the study conducted by the project in 2022, 213 municipalities/local communities have adopted energy management plans. As of June 30, 2024, the project developed TOR and started procurement of an EM system to support additional 10 cities and 2 Central executive bodies in the second half of 2024. The results will be outlined in the final PIR in 2025.	Target surpassed
OUTCOME 2					
Component 2: Pr	omotion o	f private ir	vestment	; in energy efficiency in public buildings through appropriate catalytic financial in	ncentives. / Outcome 2:
Increased availab	ility of, and	d access to,	financing	g for EE and EM initiatives in public buildings in cities and municipalities.	
Description of	Baseline	Midterm	End of	Evaluator remarks	Target achieved
Indicator	Level	target	project		0
		level	target		
			level		
No. of	0	1	3	The number of operational FSM with a bank is 2 (ESCO Factoring).	Target partially met.
operational					
FSMs with local				However, in June 2024 the project established two additional FSMs by concluding	
banks and				responsible party agreements with the Business Development Fund and the State	
financial				Agency on Energy Efficiency and Energy Savings.	
institutions for					
EE projects in				ESCO-Fund has issued its first Ioan: https://news.finance.ua/ua/hiobus-bank-	
public buildings.				vydav-persnyy-kredyt-na-enernomodernizaciyu	
				ESCO Factoring financial mechanism: This mechanism was initiated in 2019 and	
				192 contracts were signed in 2019-2021, attracting USD 1.2 million investments	
				in energy-efficient measures in public buildings.	
				The mechanism works as follows:	
				An energy service contract is signed between the owner or manager of a public	
				building and an ESCO (Energy Service Company).	
				The ESCO implements energy-efficient measures in the building, funded by a	
				bank loan.	

		The ESCO then transfers the rights to the cash receipts from the energy service contract to the bank. These receipts are deposited into the ESCO's account during the contract term to meet the company's obligations under the loan. Payments to the bank come from the savings generated by the energy-efficient measures.	
		The amount paid to the bank can be 80-100% of the total cost of the energy savings achieved.	
		Through numerous meetings with representatives from the local ESCO and banking markets, it has become apparent that the main obstacle to implementing the ESCO Factoring model is the lack of adequate collateral from ESCO companies due to the specific nature of local ESCO's. Typically, an ESCO in Ukraine holds intellectual property and engineering expertise rather than many tangible assets that banks consider "solid collateral."	
		To address this issue and facilitate the model's implementation in the local market, it was recommended to utilize future ESCO project cash flows as collateral. In this approach, once the energy savings achieved in a specific project have been verified, the ESCO company would assign the corresponding contract payments to the bank. A few rounds of discussions with the National Bank of Ukraine on the respective changes to the regulative legislation were unsuccessful. According to the NBU's position, the future project's cash flows couldn't be treated as collateral for the loan.	
		In the reporting period, the project developed a draft of the assessment of the current situation regarding ESCO factoring as a lending tool for ESCO companies in Ukraine, identified existing gaps and barriers and provided conclusions and recommendations on the implementation and expansion of ESCO factoring or similar tools among Ukrainian commercial banks.	
		The assessment shows that in 2022, the ESCO Factoring model was practically non-functional due to the ongoing war in Ukraine. The banking risk departments assessed the risk of non-payment by EPCs from local municipalities as "very high."	

		As a result, no new ESCO Factoring contracts were signed during the reporting period	
		The assessment was essential for understanding the challenges ESCO companies	
		encounter in securing financing and will support the advancement of financial	
		mechanisms for ESCO in Ukraine.	
		The project also developed a banking product aimed at financially supporting	
		ESCO projects. The product is in the final stages of development and will be sent	
		to Ukrainian banks in the second half of 2024.	
		Creating a specific banking product for ESCO-led projects ensures that financial	
		Institutions have tailored solutions that meet the unique needs of these projects.	
		within the Financial Mechanisms developed and piloted by the project By	
		offering a ready-to-use banking product, the project lowers the entry barriers for	
		banks, making it easier for them to provide financial support for ESCO projects.	
		The product aimed at overcoming the barrier with "sufficient collateral" by	
		proposing the combination of the state guarantee and partial compensation of the	
		loan tenure. As well as to decrease the existing "market" interest rate by	
		subsidizing the interest rate through a special governmental financial programme.	
		(1) ESCO Fund (Affordable Finance Facility).	
		In the second quarter of 2023, a new model was developed by the Project Team.	
		The ESCO Fund was considered to be established as a Loan Guarantee Revolving	
		Fund (LGRF). This model involves the reuse of funds and providing of new loans	
		as a result of the Fund operation after repayment of previous loans.	
		Three main financial instruments are proposed to be used to catalyze the loans to	
		local ESCO companies:	
		1	
		• loan guarantees to commercial banks: the guarantees should have specific	
		eligibility criteria aligned both with the borrower (ESCO) and the project to be	
		implemented. The guarantees should monitoring and evaluation frameworks to	
		measure and report climate performance and disclose the carbon footprint of the	
		guaranteed portfolio in later stages;	

• compensation of the interest rate and/or loan principal: both instruments fall under the category of "loan softening instruments," offering more favorable terms compared to market loans. The compensation of the loan principal could be allocated on a competitive basis and tied to the project's energy efficiency performance indicators.	
By utilizing these financial instruments, the aim has been to provide support and incentives for local ESCO companies, making it easier for them to access loans and promote energy efficiency projects.	
The ESCO Fund should collaborate with a network of local partner banks to effectively disseminate the proposed financial tools and solutions for ESCO across various regions of Ukraine and among different service providers. This approach ensures the wide availability and accessibility of these financial mechanisms throughout the country. By partnering with local banks, the ESCO Fund can reach a broader range of stakeholders and facilitate the implementation of energy efficiency projects in diverse regions.	
• During the first quarter of 2023, the Project organized two communication meetings to foster dialogue and collaboration for the establishment of the Affordable Finance Facility:	
- Communication Platform "ESCO Fund: Models of Sustainable Financing for Large-scale Thermal Modernization of Buildings and Energy Modernization of Community Infrastructure" held at the end of January 2023.	
- Webinar on "Loans for ESCO: Opportunities and Prospects"- March 2023.	
These meetings brought together a diverse group of participants, including representatives from the Ministries of Economy and Finance, the relevant committee from Verkhovna Rada, the State Agency on Energy Efficiency and Energy Saving of Ukraine, the Business Development Fund, Ukrfinzhytlo, the Association of Energy Service Companies of Ukraine, 13 ESCO companies, and	

The primary objective of these events was to facilitate discussions on the practical
aspects of establishing and operating the ESCO Fund. Both demand-side
stakeholders (ESCO companies and industry associations) and supply-side
stakeholders (financial institutions and local banks) were actively engaged in
sharing their perspectives and insights.
• Following these discussions, the project signed a Protocol of Intent with the
Business Development Fund to enhance the promotion of the ESCO Fund topic.
This agreement signifies the commitment to collaborate and work towards
advancing the objectives of the ESCO Fund.
• On March 22, 2023, the establishment of the ESCO Fund was discussed
during a meeting between the UNDP Resident Representative and the Minister of
Finance of Ukraine. During this meeting, the Ministry of Finance expressed its
assurance of support for the project activities related to the ESCO Fund. This
signifies a positive commitment from the Ministry of Finance towards the
initiatives of the project.
• In May 2023, the project team developed the Terms of Reference (ToR) for
the recruitment of a company responsible for designing, refining, and structuring
the Affordable Finance Facility for ESCO financing in Ukraine. The initial market
analysis indicates the presence of suitably qualified candidates in the market.
The RPA modality was chosen to engage the Business Development Fund (BDF)
for AFF design and establishment. The project prepared HACT and PCAT for this
purpose. The project Board fully supported the decision to conclude the RPA with
the BDF on February 14, 2024.
UNDP signed a MoU with the Ministry of Finance on 7 February 2024 in order to
facilitate financing for energy service companies (ESCOs) by establishing an
ESCO-fund.
RPA with the Business Development Fund is signed in June 2024. Kick-off event
was held on June 5, 2024, in Kviv and online "ESCO Fund: Energy efficiency for
sustainable development". A total of 66 participants registered for the event (39%)
women and 61% men)

		Business Development Fund (BDF) is a state-owned non-banking financial
		institution licensed by the National Bank of Ukraine. The Fund is owned by the
		Government of Ukraine represented by the Ministry of Finance of Ukraine
		The Fund implements the projects through numerous state-and donor-funded
		financial programmes. In 2021 the total amount of financial support for small and
		medium-sized businesses in Ukraine under all the Fund's programs amounted to
		almost UAH 109.2 billion, up by UAH 61.2 billion more than according to the
		results of 2020.
		As of the end of 2023 more than 45 Ukrainian banks were the partners of BDF in
		implementation of the state and donor-financed financial programs.
		The total BDF loan portfolio exceeded UAH 100 bln. as of the end of 2023.
		The ESCO Fund is expected to be fully operational by mid of August 2024.
		(2) National Decarbonization Platform FSM:
		Besides the Affordable Finance Facility, the project has been also working during
		the reporting period on the option of transferring the project funds to finance the
		National Decarbonization Platform, established by SAEE.
		The project prepared a roadmap for setting up the FSM to aid in the
		implementation of ESCO projects. After a series of internal consultations, it was
		concluded to use the Performance Based Payment modality for the FSM
		establishment with the SAEE.
		The decision to conclude the LOA with the SAEE was fully supported by the
		project Board held on 14 February 2024.
		LOA with the SAEE was finalized. Kick-off event was held on May 20, 2024, in
		Kyiv and online on "ESCO: affordable investments for the state and
		communities".
		The FSM was presented to the local ESCO companies together with the eligibility
		criteria for the projects to be financed. The national Decarbonization Platform is
		expected to start providing the loans for ESCO projects by the beginning of
		September 2024.
		The Project is jointly working on a new banking product related to the ESCO in
		Energy Efficiency with Ukrgasbank and Ukreximbank. The conclusion of MoU's
		with both banks is expected later in 2024.
I	L	1

				Both FSM's developed by the projects will get the project costs in the amount of USD 350,000. These funds are expected to be streamlined for the subsidization of loans for ESCO companies along with the support programmes (compensation of the loan interests) provided by the state. Overall progress on the FSM: on the date of this report preparation, the project is on track to achieve the targets related to the FSM indicators.	
No. of EE projects in public buildings financed either through the FSM; or by private sector and ESCO investment.	0	2	10	The total number for this indicator is 285; out of which 39 in this reporting period through EPCs.	Target surpassed

OUTCOME 3

Component 3: Demonstration of the implementation of EPC modality for energy efficiency initiatives in public buildings in different cities/municipalities. / Outcome 3: Increased adoption and implementation of EE technologies, techniques, and practices in public buildings; and enhanced confidence in the viability of EE projects in public buildings.

Description o Indicator	Baseline Level	Midterm target level	End of project target level	Evaluator remarks	Target achieved
No. o	f 0	(not set	20	The total number for this indicator is 556 projects. This is the total number of	Target surpassed
replication		or n/a)		EPCs that were implemented using the templates of tender documentation,	
ESCO-led EPC				developed by the project.	
EE projects in	L			In the reporting period, the project completed verification and performance	
public building	6			analysis of the first 53 pilot ESCO projects in 10 partner cities of the project	
planned and	l			ompleted between from 2017 - 2019):	
implemented by	r			- 15 out of 53 previously supported by the project pilots are operational;	
cities and	l			- 26 are successfully completed;	
municipalities in	L			- 2 are not operational due to legal issues;	

other regions of	- 10 are not operational due to military actions.	
the country.		
	As a result, 23 partner cities were selected for further cooperation, including Bila	
	Tserkva, Vinnytsia, Drohobych, Zhyahel, Kamianets-Podilskyi, Korosten,	
	Kremenchuk, Lviv, Nizhyn, Novovolynsk, Odesa, Pivdenno-Ukrainsk, Pryluky,	
	Rivne, Svitlovodsk, Slavutych, Khmelnytskyi, Cherkasy, Chornomorsk, Chortkiv,	
	Kyiv, Pervomaiskyi, and Kryvyi Rih.	
	In the reporting period the project continues to assist the cities with the following	
	activities:	
	• Institutional support for preparation, procurement procedures, and signing	
	of energy service contracts.	
	With the adoption of the new Decree KMU No. 621 dated 19 June 2023, the	
	project has supported the cities by preparing an updated baseline level of energy	
	consumption. Based on the new calculations, the project prepared an analysis of	
	the investment attractiveness of 500 ESCO projects, and drafts of 170 tender	
	documentation for ESCO pilots in 50 cities.	
	128 tenders were announced based on the prepared documents in 31 cities.	
	A total of 39 new contracts for the total contract price of 497 million UAH (\$12.5	
	mln) have been signed as of 30 June 2024:	
	- 20 EPCs directed to thermal modernization measures (thermal energy savings	
	vary from 16 to 75% per year and will amount to 5.7 thousand Gcal per year).	
	According to the results of implemented EE measures, it will be possible to	
	save over 500,000 USD (20.6 million hryvnias) every year.	
	- 19 EPCs for the installation of Solar Power Plant (SPP) - savings of electrical	
	energy varies from 8 to 30% per year and will amount to 3.2 mln kWh per	
	year. According to the results of the implemented SPP, it will be possible to	
	save 570,000 USD (23.4 million hryvnias) every year.	
	The average term of contracts is 14 years.	
	11 EPCs have been implemented by energy service companies during the	
	reporting period, including:	
	- Kryvyi Rih: 2 solar energy systems (30 kW and 40 kW) installed for 2 hospitals	
	- Chornomorsk: 400 kW solar energy system + 150 kWh storage installed for	
	Water Utility	
	- Drohobych: 144 kW solar energy system installed for a hospital	
	- Korosten: 100 kW solar energy system installed for Water Utility	

 Yahotyn: 50 kW solar energy system installed for a hospital Pervomaiskyi: 350 kW solar energy system installed for Water Utility Vyshhorod: 100 kW solar energy system installed for Water Utility Slavutych: individual heating point (IHP) and roof insulation installed in a hospital Brovary: individual heating point (IHP)and roof insulation installed in a kindergarten Brovary: individual heating point (IHP)installed in a kindergarten The total contract value exceeds 11 million USD (460 million UAH). The average contract duration is 14 years. The project continues to support the cities throughout the process of ESCO procurement, and provides energy audits and pre-feasibility studies. For central governmental bodies the UNDP project provided energy audits and pre-feasibility study for the involvement of ESCO in relation to the objects of the SPP, including a Governmental building of the Cabinet of Ministers of Ukraine, Higher Anti-Corruption Court, National Academy of Sciences of Ukraine; For municipalities the project conducted energy audits of city street lighting network and prepared, procurement documents of energy service contract "ESCO-Light" for 4 cities (Novovolynsk, Cherkasy, Priluky, Stebnik (Drohobych amalgamated territorial community). The project also conducted 17 more energy audits of public buildings. The project developed technical specifications, design documentation, and procurement of equipment for ventilation systems in 6 shelters in 4 cities: Nizhyn, Slavutych, Korosten, Drogobych). The estimated procurement of 6 smart heat energy meters for ESCO pilots and announced TOR for this procurement. In December 2023, in cooperation with the State Energy Efficiency Agency, the Ministry of Infrastructure, and the NGO Ecoclub, the project held a series of educational webinars on energy management "Basics of Energy Management for 	
In December 2023, in cooperation with the State Energy Efficiency Agency, the Ministry of Infrastructure, and the NGO Ecoclub, the project held a series of	
educational webinars on energy management "Basics of Energy Management for	
Energy Sustainability." Total of 2147 participants registered for training. As a	
result of the final knowledge assessment, 821 participants received certificates	
(46% are men and 54% women).	

				Based on request from SAEE, 7 press tours on completed pilots are planned for September 2024. The project supports the SAEE in the development of a technical specification for the website of the SAEE with the aim of forming a database of ESCO facilities and ESCO companies, as well as verifying the effectiveness of all concluded EPCs. The project developed TOR and procurement is in the tender stage for development for the SAEE with ESCO register.	
No. of EE projects in public buildings designed and financed by the private sector (apart from ESCOs) for implementation as influenced by the results and outcomes of the pilots implemented under the project	0	(not set or n/a)	10	The total number for this indicator remains 39.	Target surpassed.
OUTCOME 4 Component 4: Es Improved capacit public buildings.	tablishmer y and capa	it and opei ability of c	rationaliza ity/munic	ation of a National Energy Management and Information (NEMIS) and a NEMIS ripality governments in energy monitoring and reporting, energy management, a	Database. / Outcome 4: nd energy efficiency in
Description of Indicator	Baseline Level	Midterm target level	End of project target level	Evaluator remarks	Target achieved

Cumulative no.	0	10	100	The cumulative no. of cities/municipalities that are implementing EMIS is 213.	Target partially	met (
of				However, they don't contribute to NEMIS yet as that will be piloted in the 2nd	NEMIS is	not
cities/municipali				half of 2024.	functional).	
ties that are				During the reporting period the project has prepared ToR for piloting "EMIS From		
implementing				Scratch" in 3 cities (Bahmach, Koziatyn, Pervomaiskyi). The scope of the pilot		
EMIS and				includes procurement of automated energy metering devices and EMIS software		
contributing to				for 52 public buildings in selected cities.		
the NEMIS				Furthermore, the project finalized TOR and announced procurement to support		
				10 communities and 2 central executive bodies with local EMIS software		
				procurement. 464 public buildings will be connected for daily energy monitoring		
				of energy consumption.		
				In 2023 the project analyzed the educational programs for energy auditors and		
				prepared a set of the typical energy audits for training purposes. In the reporting		
				period the project also finished training sessions for 64 trainers of energy auditors		
				in cooperation with the TEAD project.		
Cumulative no.	0	(not set	10	N/A as of 2023 as NEMIS will be piloted in 2024.	Target not met.	
of building		or n/a)				
(public and						
private) EE						
projects that are						
designed based						
on information						
derived from the						
NEMIS and						
NEMIS						
Database.						

3.3.2 Relevance

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 level?

The EEPB project is fully aligned with the goal of the GEF-8 (2022-2026) climate change focal area²⁷ strategy to enable developing countries to shift toward net-zero greenhouse gas emissions and climate-resilient development. To achieve this, the strategy is structured around both single focal area investments and integrated programs covering multiple focal area investments. Under focal area investments, GEF projects promote innovation, technology development and transfer, and enable policies directly aimed at reducing carbon emissions. Through the integrated programs, the GEF invested climate finance resources to tackle broad drivers of environmental degradation cutting across several focal areas (including biodiversity and land degradation), on themes related to sustainable cities, food systems, conservation of forest biomes, and ecosystem restoration, among other topics.

Also, the EEPB project is fully aligned with UNDP²⁸ goals to assist countries with their climate change mitigation efforts, guiding them towards sustainable, low-carbon and climate-resilient development. This also contributes to the achievement of the Sustainable Development Goals (SDGs), particularly those related to affordable and clean energy (SDG7), sustainable cities and communities (SDG11), and climate action (SDG13).

Ukraine's 2030 energy efficiency targets and National Energy Efficiency Action Plan (NEEAP) up to 2030 were adopted in December 2021, 3-year action plans for the implementation of the NEEAP are prepared in accordance with current legislation, particularly the Energy Efficiency Law. The adopted energy 2030 efficiency targets are aligned with the 2030 energy efficiency targets²⁹.

The project was directly aligned to support Ukraine achieve its global priorities and commitments. The EEPB project contributed to Ukraine's ability to deliver on their Low Emission Development Strategy (LEDS) and their National Determined Plan³⁰, as well as their commitment to the United Nations Framework Convention on Climate Change and the Paris Agreement. The Nationally Determined Contribution (NDC) Ukraine developed in relation to the Paris Agreement specifically articulated the need for international financial support to enable the development of a sustainable system to reduce GHG emissions from public buildings. In addition, the project supported the country's achievement of its targets for the Agenda 2030 and the SDGs, primarily SDG 7: Affordable and clean energy; SDG 11: Sustainable cities and communities; SDG 13: Climate action. To accomplish this, the project is aligned with the SDG Framework in Ukraine³¹,

²⁷ <u>https://www.thegef.org/sites/default/files/documents/2023-11/GEF_CCM_2023_11.pdf</u>

²⁸https://climatepromise.undp.org/news-and-stories/what-climate-change-mitigation-and-why-it-

urgent#:~:text=Specifically%2C%20UNDP's%20offer%20of%20support,projects%2C%20energy%20efficiency%20initiatives%2 0and

²⁹ Ukraine Annual Implementation Report, Energy Community, November 2023.

³⁰ <u>https://unfccc.int/sites/default/files/NDC/2022-06/Ukraine%20NDC_July%2031.pdf</u>

³¹ <u>https://www.undp.org/sites/g/files/zskgke326/files/migration/ua/SDGs_NationalReportEN_Web.pdf</u>

particularly its "Smart Growth" development pathway.

The project was fully aligned with and focused on the Global Environmental Benefits through building capacities for mainstreaming and future implementation of Ukraine country's Environmental Security and Climate Adaptation Strategy until 2030,³² which in the longer term is expected to significantly contribute to the reduction of CO2. For example, the National Action Plan for Energy Efficiency³³ anticipated that the savings coming from ESCO public facilities and utilities was already showing signs of leading by example for the public sector to drive down carbon emission.

A top priority for Ukraine is harmonization across their government administration as they aspire to gain accession into the European Union. The project leveraged existing agreements and data was shared between local communities and the state level.

From the outset, the project was intentional in engaging a wide range of government actors. The Project Board consisted of key high-level government officials who were involved with decision-making and oversight from the project's inception.

Once project implementation was fully underway in the second half of the project cycle, the PMU worked in close collaboration with the state and local government officials, as well as direct beneficiaries. Local officials reported the interventions were aligned with their local government development plans and expectations.

The Ukrainian municipalities paid over 500 million USD for energy in 2020 and this amount will increase due to rising tariffs. In this regard, the ESCO mechanism could be used to attract investments in energy efficiency on the municipal level to ensure reduction in energy consumption by 20% to 40%, which will consequently save up to 200 million USD. The possibility of applying the ESCO mechanism in Ukraine is defined by the laws. However, the first stage of ESCO implementation has shown gaps in legislation that require improvements to attract more investments through the creation of favorable loan conditions for ESCOs which will contribute to more comprehensive energy efficiency measures and confirm the relevance of the EEPB project.

Communications with potential intervention sites and their communities were improved in response to the specific situation. Even so, in some locations, beneficiaries and local officials reported that community support remained high and oriented towards the project's goals, even during full scale war.

3.3.3 Effectiveness

Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved?

The complex nature of the EEPB project required an extensive network of partnerships to ensure its success. To that end, the project surpassed its target for the number of partnerships established, laying a

³² <u>https://www.kmu.gov.ua/en/news/uhvaleno-strategiyu-ekologichnoyi-bezpeki-ta-adaptaciyi-do-zmini-klimatu-do-2030-roku</u>

³³https://euea-energyagency.org/en/news/the-government-of-ukraine-adopted-the-national-action-plan-for-energy-efficiencyuntil-2030/

strong foundation for the project's implementation and supporting its sustainability. In addition to the relationships already mentioned with the SAEE and other members of the Project Board, the project developed partnerships with the ESCO Association and others.

When implementing the ESCO model at the local level, the project partnered with 45 municipalities, 4 government bodies, and 4 financial institutions/banks (Annex K). As the project moves towards closing, they expanded their existing partnerships with state level institutions (the Business Development Fund) to improve access to financing.

3.3.3.1 Overall objective: To assist the Government in addressing the barriers to transform the market for investments in energy efficiency in public buildings in the country.

The objective of this project was to assist the Government of Ukraine, as outlined in the "Energy Strategy of Ukraine to 2030", to "address and provide for the growing importance of energy efficiency" within "the context of a world of rising oil and gas prices, where there is greater emphasis on security of supply and on the need to reduce emissions of GHGs. It is precisely because of energy efficiency's direct and positive impact on the economic, social and environmental dimensions of energy systems that it is widely recognized by policy makers as the priority in achieving early and sustained progress on energy and climate goals". The project provided catalytic support to the implementation of energy efficiency measures in public buildings by expanding budgetary resources and actively engaging the private sector. More specifically, the project:

- Created attractive and competitive business terms and conditions for investors/ESCOs, such as
 initial support in the preparation of feasibility studies and in terms of an investment grant, which will
 gave developers long-term stability and provided sufficient investment return; established an
 Innovative Financing Mechanism to facilitate ESCOs to be able to obtain commercial financing in
 order to implement EPC contracts;
- Developed financial incentives for ESCOs to invest in Energy Efficiency in public buildings;
- Provided capacity development to ESCOs to encourage investment in support of Energy Efficiency in public buildings; and
- Supported improved energy management in public buildings, through more metering and energy management information systems, as tools to encourage and promote additional investments in energy efficiency.

Ministry for Communities, Territories, and Infrastructure Development of Ukraine - the Ministry of Infrastructure on is the central body responsible for formulating and implementing the government's policy in the field of construction, architecture, town planning, housing and communal services. In this capacity, it defined priority directions of development regulating the supply of electricity, heat and hot water supply to buildings, both public and private, in addition to ensuring compliance with regulations and standards of building infrastructure constructed with state budgetary funds. As such, it was, together with the SAEE, the first line of support to implement the EEPB project under the UNDP DIM.

Actual cumulative direct energy savings as of July 2024 for ESCO pilots was 16052,48 tCO2e with estimated savings over a 20-year period of 69,190.0 tCO2e (without destroyed/damaged and objects

with issues), resulting from refined and updated calculations. The estimated 20-year period amount was based only on baseline calculation and did not envisage correction by actual savings. As of June 2024, 24,164.16 MWh were saved cumulatively since the Project start. The project consists of four components, as outlined below. It was recognized that on-the-job training was to be provided by the recruited consultants, both local and international, during the normal course of their support to the relevant project activities. This was added to Components 2 and 4 that, respectively, addressed capacity development on financial and technical issues required by key government and financial institutions. Moreover, the project sought to achieve gender equality through the engagement of women by participating in all project activities, specifically those related to capacity development under the various components.

3.3.3.2 Component 1: To formulate and introduce a streamlined and comprehensive legal and regulatory framework to promote energy efficiency in public buildings through strengthening of monitoring and enforcement mechanisms.

The expected outputs under this component are: 1) Signature of MoUs with 10 small and medium sized cities in Ukraine to work on ESCO and energy management; 2) Support for the preparation of Sustainable Energy Action Plans (SEAPs) and signature of EU Covenant of Mayors (as required); 3) Development and adoption of secondary legislation to support new law including financial incentives provided to ESCOs to invest in Energy Efficiency in public buildings such as income tax holiday for a specific period of time, duty and tax exemptions on equipment and services they provide; and 4) Regulations to support the development of a secondary market for EPC contracts in order that the contracts can be sold to investors to provide for further liquidity and additional investment.

The Project provided support to beneficiaries drafting numerous secondary legislation acts related to the implementation of Law on Energy Efficiency, most are under consideration and awaiting approval.

- 7 legal actions were drafted and adopted with the support of the project.
 - Decree of the Cabinet of Ministers "On the details on determining of baseline concerning buildings where violation of the object's operation mode was recorded (downtime, stoppage of work, change of functional purpose) from 2 June 2024 #382.
 - Decree of the Cabinet of Ministers of Ukraine "On the creation of favorable conditions for increasing the energy efficiency of community infrastructure during the period of the legal regime of martial law in Ukraine and within 90 days from the date of its termination or cancellation", as well as an explanatory note to the policy and a list of recipient authorities of the note" from 19 June 2023 #621.
 - Decree of the Cabinet of the Ministers of Ukraine "On approval of the Procedure for maintaining and publishing a database of extracts from energy audit reports, independent monitoring of extracts from energy audit reports, independent verification of energy audit reports" was under consideration at the Ministry for Communities, Territories, and Infrastructure Development of Ukraine.
 - Decree of the Cabinet of Ministers of Ukraine "On the approval of the Procedure for calculating the target indicator of the annual reduction of energy consumption for obligated parties" was under consideration at SAEE.

- Order of the Ministry of Energy "On approval of the Procedure for forming, publishing and updating the list of energy service providers, potential energy service facilities" was under consideration for Communities, Territories, and Infrastructure Development of Ukraine.
- Amendments to Resolutions of the Cabinet of Ministers of Ukraine dated February 24, 2016
 No. 166 ("On approval of the Procedure for the functioning of the electronic procurement system and authorization of electronic platforms") and dated October 12, 2022 No. 1178 ("On Public Procurement", for the period of the legal regime of martial law in Ukraine and within 90 days from the day of its termination or cancellation").
- Amendment to Resolutions of the Cabinet of Ministers of Ukraine dated May 10, 2024 No. 1460 (On the implementation of energy management systems") dated December 23, 2021 No. 1460")
- 5 Decrees or Resolutions were drafted with the support of the project and under consideration at the time of this TE.
 - Draft resolution of the CMU "On the approval of the Procedure for the functioning of the National Energy Efficiency Monitoring System and the organization of electronic information exchange, as well as the list of information owners, information exchange participants who provide information to the National Energy Efficiency Monitoring System (including the definition of the system's technical administrator)" was under consideration at the Ministry for Communities, Territories, and Infrastructure Development of Ukraine.
 - Draft Decree of the Ministry of Energy of Ukraine "On approval of the Methodology for determining the target indicator of annual reduction of energy consumption" was under consideration at SAEE.
 - Draft Decree of the Cabinet of Ministers of Ukraine "On approval of the Procedure for collecting primary information, monitoring and evaluating the implementation of the National Energy Efficiency Action Plan" was under consideration at the Ministry for Communities, Territories, and Infrastructure Development of Ukraine.
 - Draft Decree of the Ministry of Energy of Ukraine "On approval of the procedure for maintaining the roster of national authorities and local governments where an energy management system is implemented" was under consideration at the Ministry of Energy.
 - Draft order of the Ministry of Energy of Ukraine "On approval of the Procedure for maintaining the register of business entities that have received certificates of energy and/or environmental management systems" was under consideration at the Ministry of Energy.
- Explanatory note to the draft resolution of the Cabinet of Ministers of Ukraine "On approval of the procedure for monitoring the implementation of the thermal modernization strategy of buildings for the period up to 2050".
- Resolution of the CMU "On Approval of the Procedure for Monitoring and Evaluation of the Results of Achievement of the Target Indicator of the Annual Reduction of Energy Consumption"
- Draft procedure for incentivizing employees of the budgetary sphere for the effective use of energy resources at the objects of the budgetary sphere.
- Analysis of regulatory impact and Draft Resolution of the Cabinet of Ministers of Ukraine "On setting the amount of the fee for independent verification of energy audit reports at the request of the energy audit requester".

- 3 Laws were drafted; 2 are awaiting review by the Parliament and 1 was not approved.
 - Draft Law of Ukraine "On Amendments to Some Laws of Ukraine Regarding the Creation of Conditions for the Implementation of the National Information System for Energy Monitoring of Objects of State Authorities and Local Self-Government Bodies" (with explanatory note and information on the impact of the draft law) was waiting review by Parliament.
 - Draft Laws No. 4356 and 4357 dated November 10, 2020, which remove a number of obstacles for ESCO waiting review by Parliament.
 - The draft law amending the Law on Energy Efficiency regarding the mandatory introduction of an energy monitoring system and an energy management system. - not adopted, didn't pass the Parliament's review
- 2 Orders have been drafted and were under consideration at the time of this TE.
 - Draft order of the Ministry of Energy "On the Procedure for maintaining and publicizing the database of energy auditors" was under consideration of the Ministry for Communities, Territories, and Infrastructure Development of Ukraine.
 - Order of the CMU "On determination of energy efficiency classes of products (goods) for the purpose of use during public procurement was under consideration at the Ministry for Communities, Territories, and Infrastructure Development of Ukraine

In addition to legal and regulatory support, the project prepared the following reports and knowledge materials:

- 1. Status of implementation of systems of energy management in Ukraine
- 2. Reports on Energy First Principle
- 3. Energy efficiency classes of energy-consuming products
- 4. Report on the analysis of the state of training of energy auditors in Ukraine
- 5. An Overview of the Best Practices of ESCO Market Design and Recommendations for Ukraine
- 6. Recommendations on Financial Incentives Schemes to Support ESCO Market Mechanism, Including Analysis of all Options Aimed at Supporting ESCO Market Development
- 7. Performance assessment of pilot ESCO projects in partner cities. Successful experience of the implementation of ESCO projects.
- 8. Pre-feasibility studies for the implementation of the solar power plant model through the ESCO modality
- 9. Analysis of legislative barriers to ESCO
- 10. Analysis of legislation on energy monitoring

26 cities and municipalities were directly supported by EEPB to develop and implement approved SEAPs and preliminary feasibility studies since the start of the project and 4 cities solely. There were 79 eligible project supported interventions (SEAPs and preliminary feasibility studies) during 2017-2022. In addition to 38 pre-technical design documents in the previous period, the project conducted 22 more pre-technical design documents for solar power in hospitals and water facilities and 2 cities with pre-technical design documents for autonomous heating in 8 pilots.

The project continued to support cities with SECAPs (Sustainable Energy and Climate Action Plans) based on partner's needs and consequences of the 2023-2024 autumn-winter season. In 2024, the project developed sections on energy balance and energy efficiency measures for SECAPs in Koziatyn, Kremenchuk, and Kryvyi Rih. The same activity was planned for Berezhany.

According to the study conducted by the project in 2022, 213 municipalities and local communities adopted energy management plans (EMPs). In the second half of 2024, the project developed TOR and started procurement of an EM system to support additional 10 cities and 2 Central executive bodies.

3.3.3.3 Component 2: To promote private investment in energy efficiency in public buildings through appropriate catalytic financial incentives, including the establishment of a Financial Support Mechanism (FSM).

To support investments in ESCO, the project designed an ESCO Factoring mechanism that enabled ESCO companies to receive financing from Ukrainian banks. During 2019-2021 ComInBank financed 192 EPC contracts with a total volume of UAH 41.6 million (approximately US\$1.54 million). Local ESCOs invested an additional UAH 32 million (around US\$1.18 million) during these years. In 2022, the ESCO Factoring model was practically non-functional due to the ongoing war in Ukraine. The banking risk departments assessed the risk of non-payments by ESCO contracts from local municipalities as "very high." As a result, no new ESCO Factoring contracts were signed after the start of full-scale invasion.

The project also supported Kaniv city in establishing a municipal ESCO company. This company successfully carried out a full renovation of a kindergarten and a school, using US\$140,000 of its own funds and attracting a loan from NEFCO for US \$800,000, with the project gaining a total of US \$940,000 additional investments in EE.

Furthermore, the project conducted feasibility studies and prepared technical designs, which facilitated Ternopil city in securing a EUR 30.5 million loan from the European Investment Bank (EIB) to completely renovate 39 educational public buildings.

At the time of the TE, the project was piloting two financial mechanisms for ESCO support and de-risking the investments in ESCO projects: the Finance Support Mechanism with the State Agency for Energy Efficiency and Energy Saving of Ukraine and Affordable Finance Facility with the Business Development Fund. The mechanisms were expected to attract up to US \$2 million in additional investments through the ESCO model.

3.3.3.4 Component 3: To implement at least 10 pilot projects in selected public buildings to demonstrate the energy and cost-saving potential of energy efficiency measures.

In total ESCO pilots in 53 public buildings were supported by the Project in 10 cities: Nizhyn, Borodyanka, Slavutych, Odessa, Drohobych, Savran, Korosten, Pervomaisky, Dubno, and Severodonetsk before the suspension, benefiting over 30000 people. 49 structures were educational facilities, 2 healthcare buildings, street lighting, and one library. These 53 pilots leveraged 19,2 million UAH (US\$0,8 million according to 2019 exchange rate) financing from ESCO companies ESCO-BUD LTD, Kyivesko LTD, PE Hydromontage, Energy Efficient Odess LTD, "Energozberezennia Lviv" LTD, Internegro Service LTD, ESCO UA LTD, which

were selected according to a Ukrainian transparent tender system Prozorro. Among these 53 pilots that were concluded before the project's suspension, 23 were already successfully completed (ahead of schedule), 18 continue to receive energy-saving services according to the contracts, 2 are not operational due to legal issues, and 10 are not operational due to military actions. Additionally, after the project's suspension was lifted, EEPB continued to support cities with ESCO pilots, resulting in 63 new pilots for 16.5 million USD invested from ESCO companies. Of these contracts, 19 pertained to comprehensive energy modernization (46% heat energy savings), while 13 ESCO contracts involved the installation of solar power stations in hospitals and water facilities for the population (with up to 17% electricity savings).

3.3.3.5 Component 4: To establish an institutional basis and comprehensive nation-wide Energy Management Information System for public buildings in Ukraine to support energy efficiency in public buildings.

During 2017-2019, the project directly supported the introduction of energy management at the municipal level for 54 cities and 25 villages, including a total of 784 buildings. The project in 2022 supported two entire oblasts (regions) of Ukraine (66 cities and communities) and Odessa city for 7,020 public buildings in total.

3.3.4 Efficiency

Efficiency: Was the project implemented efficiently, in line with international and national norms and standards?

Considering the difficulties and delays experienced in the project, it is notable that the Project Board meetings were held 6 times with the most recent one in July, 2024. It was not clear whether there was a semiannual or quarterly reporting mechanism in place by the project team to the Project Board Committee.

During MTR activities, COVID restrictions did not hamper nor delay the project in face-to-face activities such as the mid-term reporting, consultations, training and events during 2016-2019. Just before the initial impact of COVID restrictions (March 2020), the project was officially suspended (November 26, 2019 - March 15, 2021). Since 2022, the project steering and management was restructured and optimized to meet most of the project's end targets.

Overall, the project management structures were found suitable and efficient and guided by the Project Board. Based on the last PIR³⁴, the progress in implementation was rated as moderately satisfactory, which coincided with the country office's self-rating. The cumulative delivery moved from 60.17% to 70.42% in the last 12 months, with US\$3,859,153 out of US\$5,480,000 having been spent.

It is noteworthy that in the last 3-year period, the project team has made impressive efforts to move from 47.82% of the delivery rate to the current 70.42%. Also in the last 3 years, the project was able to leverage investments into concrete, measurable outcomes while focusing on piloting the ESCO model to decrease GHG emissions.

Analysis of project expenditures by year suggested that in 2016 there were no resources consumed,

³⁴ Project Implementation Report, 2024.

although most of the financial resources were budgeted during that period, pointing to the slow start and time required to set up project structures and implementation mechanisms. In subsequent years the project geared up its implementation and, in 2024, its utilization rates reached the highest level, before slowly decreasing towards the end of the project.





During the TE process, US\$700,000 was anticipated to be paid for 2 FSMs (the first tranche was processed but not yet reflected in the reports). While, two big procurement procedures were at the contract signing phases and EEPB planned to utilize the entire budget through to the project's end.

EEPB contributed to significant structural changes in Ukraine, including behavioral, policy, and institutional changes. For example, the development of the ESCO market frame and implementation of the first ESCO projects resulting from EEPB's intervention.

As of September 30, 2024, the project facilitated US\$16.5 million investment in energy efficiency from 63 EPCs that were concluded with the support from the project. During previous reporting periods, the project facilitated a US\$3.7 million investment under 53 EPCs, among them US\$2.2 million was invested by ESCO and US\$.5 million by communities under 11 enhanced-EPC. Between 2019 and 2021, according to data obtained from ComInBank within the ESCO Factoring mechanism, the bank financed 192 EPC with US\$1.54 million credited by the bank and US\$1.18 million invested by ESCOs. Due to the invasion and volatile market situation, no new loans were issued using the ESCO Factoring mechanism during the later reporting period. In response to the lack of a Factoring mechanism, the project developed a banking product and plans to present it to Ukrainian banks in the second half of 2024 to facilitate investments in energy efficiency through ESCO.

- Indirectly cumulative US\$76.4 million, via 648 EPCs for investments channeled, through the ESCO modality into the public buildings.
- According to the national procurement system BI Prozorro, the project supported the ESCO market by introducing ESCO legislation by the end of June 2024.
- UNDP Ukraine with the support of the project signed a responsible party agreement with the Business Development Fund for the establishment of an ESCO-Fund, as well as a letter of agreement with the SAEE of Ukraine to support the Decarbonization Fund of Ukraine that will facilitate loans for ESCO companies. The project estimated around \$2-3 million of direct investments through these new mechanisms for up to 15 new EPCs.

The project is jointly working on a new banking product related to the ESCO in Energy Efficiency with Ukrgasbank and Ukreximbank. The signing of MoU's with both banks is expected later in 2024. Both FSM's developed by the projects will get the project costs in the amount of US\$ 350,000. These funds are expected to be streamlined for the subsidization of loans for ESCO companies along with the support programmes (compensation of the loan interests) provided by the state.

Overall assessment of the value added by the project to drive significant and sustainable structural changes can be rated as Moderately Satisfactory (MS): more or less meets expectations and/or some shortcomings.

3.3.5 Overall Outcome

Overall, the EEPB project has achieved and surpassed its end of project targets. The project implemented 53 (of target 20) EEPB energy efficiency projects and exceeded its target by reaching a total of 30,204 total beneficiaries (37% men, 63% women)³⁵. This level of accomplishment is high, particularly given the specific conditions of the project and the complex social, legal and procedural obstacles. That, in combination with the lack of appropriate laws supporting the ESCO model in the beginning, contributed to the initially slowed pace and required the PMU to creatively find solutions to work within the current laws, bylaws and legislative in a way that facilitated immediate implementation, while at the same time supporting the development and approval of a new legislation to better support employing the ESCO model in the future.

Assessment of Outcomes	Rating ³⁶	Remarks
Relevance	Satisfactory	Well aligned with global and government priorities; limited alignment with community priorities.
Effectiveness	Highly	Met or Exceeded expectations for almost all
	Satisfactory	largeis

³⁵ The total reported beneficiaries, September 2024.

³⁶ Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight & Execution, Relevance are rated on a 6-point scale: 6=Highly Satisfactory (HS), 5=Satisfactory (S), 4=Moderately Satisfactory (MS), 3=Moderately Unsatisfactory (MU), 2=Unsatisfactory (U), 1=Highly Unsatisfactory (HU). Sustainability is rated on a 4-point scale: 4=Likely (L), 3=Moderately Likely (ML), 2=Moderately Unlikely (MU), 1=Unlikely (U)

Efficiency	Moderately Satisfactory	Project has more or less met expectations and/or some shortcomings.
Overall Project Outcome Rating	Satisfactory	Overall the project achieved what was set out in its design.

3.3.6 Sustainability: financial (*), socio-economic (*), institutional framework and governance (*), environmental (*), and overall likelihood (*)

Sustainability: To what extent are there financial, institutional, socio-political, and/or environmental risks to sustaining long-term project results?

Sustainability and resilience are at the forefront of the project. The project contributed directly to the attainment of two Sustainable Development Goals: 'Sustainable Cities and Communities' and 'Climate Action' while also supporting progress towards a number of other SDGs. The project concurrently aimed at improving capacity, knowledge tools and financing mechanisms among pilot municipalities, including the most vulnerable as it is focused on small and medium-sized towns, to build resilience to climate change consequences on municipal level.

The project set up regular and proper communication with all stakeholders, namely Cabinet of Ministers of Ukraine, State Agency for Energy Efficiency of Ukraine, Ministry of Energy of Ukraine and IFIs regarding project plans, activities, and results. The project planned to apply memorandums of understanding and other agreements to outline and agree upon its commitments and contributions. A multi-stakeholder approach has been applied to ensure a strong local ownership, relevance and sustainability of future interventions leaving no one behind.

Sustainability	Rating ³⁷	Remarks
Financial resources	Moderately Likely	Government interest and financial capacity is likely, though not commitment yet.
Socio-political/economic	Likely	Project interventions were of continued interest to by stakeholders at all levels
Institutional framework and governance	Moderately Likely	Establishment of sufficient bylaws, regulations, etc will enable further efforts, though government focus is limited during full scale war
Environmental	Likely	Project results have established a basis for longer term improved environmental impacts.
Overall Likelihood of Sustainability	Likely	The largest project investments (ESCO model) are designed for the longer-term and necessary foundation is in place.

³⁷ Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight & Execution, Relevance are rated on a 6-point scale: 6=Highly Satisfactory (HS), 5=Satisfactory (S), 4=Moderately Satisfactory (MS), 3=Moderately Unsatisfactory (MU), 2=Unsatisfactory (U), 1=Highly Unsatisfactory (HU). Sustainability is rated on a 4-point scale: 4=Likely (L), 3=Moderately Likely (ML), 2=Moderately Unlikely (MU), 1=Unlikely (U)

3.3.7 Country ownership

The project was well designed for facilitating country ownership of a number of components of the project. During the last two years and after MTR, the project developed and submitted to governmental partners the following documents in order to promote ESCO and energy management legislation:

1. Draft Decree of the Ministry of Energy of Ukraine "On approval of the Procedure for operation and promulgation of the database of energy auditors"

 "Draft Resolution of the Cabinet of Ministers of Ukraine "On approval of the procedure for maintaining and promulgation the Database of extracts from the energy audit report, independent monitoring of extracts from energy audit reports, independent verification of energy audit reports"
 Draft Resolution of the Cabinet of Ministers of Ukraine "On setting the amount of the fee for independent verification of energy audit reports at the request of the energy audit requester"
 Draft Decree of the Ministry of Energy of Ukraine" On approval of the procedure for maintaining the roster of economic entities that have received certificates of energy and / or environmental management"

5. Draft order of the Ministry of Energy "On approval of the Procedure for forming, publishing and updating the list of energy service providers, potential energy service facilities"

6. Draft resolution of the CMU "On approval of the Procedure for calculating the target indicator of the annual reduction of energy consumption for obligated parties"

7. Resolution of the CMU "On Approval of the Procedure for Monitoring and Evaluation of the Results of Achievement of the Target Indicator of the Annual Reduction of Energy Consumption"8. Draft order of the Ministry of Energy "On approval of the Methodology for determining the target indicator of the annual reduction of energy consumption"

9. Order of the CMU "On determination of energy efficiency classes of products (goods) for the purpose of use during public procurement.

10. The procedure for incentivizing employees of the budgetary sphere for the effective use of energy resources at the objects of the budgetary sphere

11. Draft Laws No. 4356 and 4357 dated November 10, 2020, which remove a number of obstacles for ESCO

12. Explanatory Note to the draft resolution of the Cabinet of Ministers of Ukraine "On approval of the procedure for monitoring the implementation of the thermal modernization strategy of buildings for the period until 2050"

13. Two Legal acts to facilitate ESCO procurement

14. Draft Decree of the Ministry of Energy of Ukraine "On approval of the procedure for maintaining the roster of national authorities and local governments where an energy management system is implemented"

15. Draft resolution of the CMU "On approval of the Procedure for collecting primary information, monitoring and evaluating the implementation of the National Energy Efficiency Action Plan"

16. Draft resolution of the CMU "On approval of the Procedure for the functioning of the National Energy Efficiency Monitoring System and organization of electronic information exchange, as well as the list of information owners, participants of information exchange, who provide information to
the National Energy Efficiency Monitoring System (including the determination of the system's technical administrator)"

17. The draft law amending the Law on Energy Efficiency regarding the mandatory introduction of an energy monitoring system and an energy management system

18. On the introduction of amendments to some laws of Ukraine regarding the creation of conditions for the introduction of the National Information System for energy monitoring of objects of state authorities and local self-government bodies.

19. A project of a voluntary agreement on energy efficiency.

20. Draft amendments to the law on the elimination of barriers to ESCO self-production (netbilling) mechanism.

Key government offices were engaged from its inception and participated in designing and guiding the project as members of the Project Board. Financial resources in-kind (US\$227,189,115) and mechanisms by the SAEE ensured country investment into the project.

The project utilized the DIM and stakeholders repeatedly expressed the importance of UNDP's contributions in enhancing government capacity, which may prove to be a challenge as the country takes ownership of project efforts. However, numerous efforts have been developed to address these issues. The establishment of a legal structure with a proven pathway to implement ESCO projects should facilitate replication and be sufficiently managed by country actors.

The EMIS system was not fully established within the government structure, and was not fully interconnected with the NEMIS.

Cumulatively, 213 cities and municipalities were implementing EMIS. However, they did not yet contribute to NEMIS, as that will be piloted in the 2nd half of 2024. As of June 30, 2024 the project prepared a TOR for piloting "EMIS From Scratch" in 3 cities (Bahmach, Koziatyn, Pervomaiskyi). The scope of the pilot included procurement of automated energy metering devices and EMIS software for 52 public buildings in selected cities.

3.3.8 Gender equality and women's empowerment

The EEPB project was intentional and multifaceted in the ways it addressed gender equality and women's empowerment. The Project Document stipulated achieving gender equality through the empowerment of women to fully participate in all project activities and specifically those related to capacity development under the various components through working, for example, with NGOs like "Krona", the Ukrainian Women's Fund, La-Strada, School of Equal Opportunities, All- Ukrainian Women's Centre of Information and Social-Economic Adaptation, and the Association of Energy Auditors.

After the project's restart, a gender expert developed a Gender Action Plan³⁸ with the EEPB team, outlining steps to more strategically support these efforts that go beyond participation levels in training. The project

³⁸ "GEF project Removing Barriers to increase investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO Modality in Small and Medium-Sized Cities Gender Action Plan: A framework of gender mainstreaming to the project," Yulia Galustian, 2022.

also emphasized partnering with women's organizations, integrated the gender perspective into policy and regulatory frameworks, developed financial products with the BDF, and promoted women's leadership in the energy sector.³⁹ One instance of this was the creation of a joint program with the Business Development Fund (BDF) to more specifically provide opportunities for women-owned or women-led ESCOs to receive a higher compensation rate during evaluation or scoring processes conducted by both the BDF and local banks. Another example was the emphasis by the PMU in assessing gender balance while implementing each of the Pilot projects (Component 3). Taking into account that the majority of Pilot projects have been implemented on the basis of kindergartens, schools, gymnasiums and hospitals, the majority of final beneficiaries of the project are children (particularly in schools, gymnasiums and kindergartens). On average, the number of girls in these institutions reaches over 60%.

Analyzing the whole project and taking into account people who worked with the project and who are direct users of public buildings involved in the project, the gender distribution was 54% of women and 46% of men. The implementation of other components of the project (EMIS introduction and awareness raising, legal framework development, FSM creation). In fact, FSM creation employed a specific strategy to support women, where the ESCO-fund provided lower interest rates for women-led ESCO SMEs and the first loan issued under the ESCO-fund was issued to a women-led company.

Women's participation in capacity building was a specific focus of the project and targets were mostly met. Numerous training sessions were conducted for energy managers. A series of 40 webinars on energy monitoring and energy management was held in June – September 2022 (46% women and 54% men). A series of 10 webinars on energy management in public buildings in communities was held in September – October 2022, training 1,055 energy managers (46% women and 56% men). Another series of webinars was held in December 2023 where 821 energy managers were trained (54% women and 46% men). Through a final series of webinars held in February – April 2024, 64 participants were certified (36% women and 64% men). In addition, the project introduced gender-specific slides to build deeper understanding of gender mainstreaming and gender issues for the series of 40 webinars on energy management held in June – September 2022.

As the EEPB project focused on public buildings (including administrative buildings of central and local governments, hospitals, public water supply, public lightening, buildings for education, and kindergartens, among others), where a majority of employees and users were girls and women, there was a special effort to respond to the gender challenges (workplace /stay comfort and health requirements). Avoidance of overheating and underheating that will result from the project activities due to improved energy efficiency, ventilation and thermal conditions of buildings, will help maintain a "thermal comfort" (optimal conditions of air temperature, humidity and air movement) for people in administrative buildings, which was important both for one's productivity and well-being, and crucial for kids, schoolchildren and sick people. Thermal comfort was anticipated to help public sector organizations reduce sickness rates and sickness absence rates, improve attendance in the workplace/at schools/kindergartens/other public places, and accelerate

³⁹ "GEF project Removing Barriers to increase investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO Modality in Small and Medium-Sized Cities, Report on Gender Mainstreaming: A framework of gender mainstreaming to the project," Mykhailo Koriukalov, July 2024.

the recovery of hospital patients. Reduction of children sickness rates, resulting from the project activities, also contributed to gender equality. The division of domestic work by gender is still persistent with women in Ukraine investing more hours in domestic work and taking longer parental leaves than men. Reduced sickness rates was expected to allow men and women to more actively participate in the labor market due to decreased sickness absence duration.

3.3.9 Other Cross-cutting Issues

The project conducted some activities related to Innovation, South South and Triangular Cooperation (SSTC), Human Rights, and Leave No One Behind (LNOB).

As discussed previously, in Ukraine the market for ESCO did not exist prior to this project. Therefore, building this market required new and innovative efforts. The financial mechanisms developed specifically for this project to facilitate resources were channeled through the Environmental Funds to the project activities. Another major innovation from this project was the high level of collaboration between the private and public sector, but with limited UNDP focus on the private sector.

From the outset, the project incorporated SSTC by integrating the learnings from the Energy Efficiency Projects and experiences in Croatia, Latvia and others. The UNDP Ukraine team also shared their experiences in adapting and employing the ESCO model with other UNDP offices. Study visits were focused on ESCO mechanisms and ESCO and EMIS in Croatia (2018, 2022) with the purpose of sharing experiences and building trust in the applicability of ESCO in Ukraine based on regional successes.

As part of adopting a Human Rights based approach and addressing the UN principle of Leave No One Behind, the project conducted activities that were intentionally designed to support the entire country, adapting their approach to the needs and context of local communities. As part of the effort to improve harmonization within the country, sharing information was leveraged so that the EMIS system could be developed to allow data from each community to be integrated into one comprehensive NEMIS system. However, the project did not incorporate ways in which their efforts could specifically include or address issues related to vulnerable or marginalized groups, other than women and NEMIS is not functional.

3.3.10 GEF Additionality

The GEF Independent Evaluation Office classifies additionality into six factors⁴⁰ including 1) Specific Environmental Additionality, 2) Legal and Regulatory Additionality, 3) Institutional and Governance Additionality, 4) Financial Additionality, 5) Socio-Economic Additionality, and 6) Innovation Additionality. The following table summarizes the GEF additionalities in the context of the EEPB project.

Table 12: GEF Additionality Factors

Additionality Factors

Description

Remarks

⁴⁰ An Evaluative Approach to Assessing GEF's Additionality, GEF: IEO March 2020 https://www.gefieo.org/sites/default/files/documents/evaluations/additionality-framework.pdf

Specific Environmental Additionality	The GEF provides a wide range of value-added interventions/services to achieve global environmental benefits (e.g., carbon dioxide reduction, reduction/avoidance of persistent organic pollutant emissions)	The EEPB project was fully aligned with the Global Environmental Fund's Focal Area on Climate Change Mitigation through building capacities, systems and infrastructure for reducing GHG emissions leading to a reduction in CO2. Since COP 28, member parties to the UNFCCC have intensified their commitment to the Energy Transition, with specific goals and commitments for the short term (by 2030) and long term (by 2050). This project aligns directly with these commitments, positioning Ukraine at the forefront of these efforts. (3.3.2. Relevance)
Legal and Regulatory Additionality	The GEF helps stakeholders' transformational change to environment sustainable legal/regulatory forms	The project has contributed to transformational change through the development of laws, regulations and other official documents, establishing a foundation from which efforts to reduce GHG emissions and CO2 will be able to be continued within Ukraine. (3.3.3 Effectiveness: Component 4)
Institutional and Governance Additionality	The GEF provides support to the existing institution to transform into efficient/sustainable environment manner	The project developed a financial mechanism within the government structure that has been tested and utilized by the project to ensure readiness for the government to continue using as the project closes. (3.3.3 Effectiveness: Component 1)
Financial Additionality	The GEF provides an incremental cost that is associated with transforming a project with national/local benefits into one with global environmental benefits	The GEF's incremental funds were instrumental in gaining country level buy-in and co- financing, as well as for building capacities of relevant stakeholders. (3.3.4 Efficiency)
Socio-Economic Additionality	The GEF helps society improve livelihood and social benefits through GEF activities	The project provided capacity building and opportunities for employment by SMEs through ESCO projects. In the longer term, the strengthening of SMEs and offering more opportunities for projects may contribute to driving a stronger economy that will yield livelihood and social benefits for people throughout the country. (3.3.3 Effectiveness: Component 1)
Innovation Additionality	The GEF provides efficient/sustainable technology and knowledge to overcome the existing social norm/barrier/ practice for making a bankable project	The project included a number of key innovations, most significantly were the financial mechanism and the significant involvement of the private sector through the ESCO model. The emphasis on capacity building and employment opportunities for SMEs through ESCO is important. By fostering

	the growth and resilience of SMEs in the energy sector, this initiative not only creates immediate job opportunities but also lays the foundation for long-term economic benefits. The strengthened SMEs will play a vital role in driving economic growth. The approach elevates the significance of the project beyond its environmental impact. (3.3.3 Effectiveness: Component 2)
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3.3.11 Catalytic/Replication Effect

The EEPB project directly responded to challenges in Ukraine by employing an approach intended to increase larger flows of finance for the energy efficiency investment, diversification of funding sources and new instruments (ESCO), and shifting the established paradigm about how to make these investments. While also catalyzing a more efficient, evidence-informed approach to lowering carbon emissions through improved energy efficiency.

Involving a large number of stakeholders from the private and public sectors also laid the groundwork for a broader catalytic effect throughout the country, as the dialogue and results are shared among colleagues and other interested parties.

The strengthening of institutional and technical capacities has provided an important foundation, which will greatly support replicability and extension of the project's results. Through a series of methodologically designed training, the project transferred concrete knowledge and skills to end users in terms of reducing emissions or implementing the ESCO model, at the 1st phase 10 municipalities and small and medium cities and in the second phase after suspension to 45 municipalities and small and medium cities.

The project developed a complete ESCO methodology, including feasibility studies, technical documentation, related manuals, examples of tender documentation that can be used as a demonstration and catalytic example for new ESCO projects in Ukraine of energy savings and reducing overall CO2 emissions in the longer term.

3.3.12 Progress to Impact

The project was directly aligned to support Ukraine achieve its global priorities and commitments. The EEPB project contributed to Ukraine's ability to deliver on their Low Emission Development Strategy (LEDS) and their National Determined Plan⁴¹, as well as their commitment to the United Nations Framework Convention on Climate Change and the Paris Agreement. The Nationally Determined Contribution (NDC) Ukraine developed in relation to the Paris Agreement specifically articulated the need for international financial support to enable the development of a sustainable system to reduce GHG emissions from public buildings. In addition, the project supported the country's achievement of its targets for the Agenda 2030 and the SDGs, primarily SDG 7: Affordable and clean energy; SDG 11: Sustainable cities and communities;

⁴¹ https://unfccc.int/sites/default/files/NDC/2022-06/Ukraine%20NDC_July%2031.pdf

SDG 13: Climate action. To accomplish this, the project is aligned with the SDG Framework in Ukraine⁴², particularly its "Smart Growth" development pathway.

The majority of activities and interventions have been conducted in the first or last two years, which also limits the ability to measure progress towards impact. For the ESCO projects, another constraint was the limited data available of usage prior to the intervention, making it challenging to measure changes in consumption and emissions from pre to post intervention.

However, it is clear that some progress towards impact has been made. The Ukraine Investment Framework (NIF) sets the guide posts for sustainable development on investment in energy efficiency in buildings in Ukraine and the following evidence is noteworthy:

- Actual cumulative direct GHG emission reduction as of June 2024 for ESCO pilots is 16,052.48 tCO2e; with estimated reduction over a 20-year period – 69,190.0 tCO2e, which in both cases is above the revised target.
- A total of 30,204 people benefited (63% women, 37% men). Also, 4,562 people benefited from the training sessions for energy managers and energy auditors.
- The project has developed a high number of local and state-level regulations, legal analyses and strategic documents that are supporting EEPB development to lead to systematic change.
- The total number of green jobs created as of June 2024 is 4,562. Including 1,003 green jobs (energy managers in municipalities) were created in 2018-2019.1,619 green jobs in Odessa city, Rivne, and Kirovohrad regions were created due to procurement of energy management systems for public buildings in these regions.

4. Main Findings, Conclusions and Lessons Learned

The following are main findings, conclusions and lessons based on the evidence-based analysis presented in the findings section of this Terminal Evaluation.

4.1 Main Findings and Conclusions

4.1.1 Project Design and Implementation

The project was thoughtfully designed, taking into consideration learnings from past projects both within Ukraine and in other countries. Most significantly, the project incorporated lessons from other projects as well as built on the results of UNDP Ukraine's previous experience.

⁴² https://www.undp.org/sites/g/files/zskgke326/files/migration/ua/SDGs_NationalReportEN_Web.pdf

The Project Board consisted of key government actors who provided important information to the design and implementation of the project, promoting and guiding the project's progress. These relationships also help the project to navigate the complex issues with Ukraine's current situation and participate in finding solutions. Partnerships with local governments, SMEs, and other stakeholders were critical to ensuring strong implementation within each location.

Project Implementation had a good start due to government approvals. However, the implementation was significantly delayed due to its 2-year suspension (2019-2021) and the COVID-19 pandemic. The project then had a slow restart in 2021-2022 with new government and project staff in place, in addition to adapting to the impacts of the full invasion. After this restructuring, the project has accomplished a tremendous amount. In fact, even while living through the full scale invasion, most targets have been met. UNDP provided invaluable capacity filling a critical gap within government offices, while their oversight and technical expertise facilitated successful interventions.

Several structural improvements and changes were undertaken by the UNDP CO and project team to facilitate the project's success. Most importantly, an extension request was made to gain an additional period in which to finalize the implementation of the project and achieve its objectives. Furthermore, the project team adjusted the log frame to ensure continued relevance of the project and, working closely with the CO team, revised the project procurement and recruitment plans. These actions addressed critical issues highlighted in both the special review and the Mid-Term Review before it.

A review of the project's CO2 accounting methodology identified a process in which the tracking of CO2 emissions reductions can be enhanced, by making it more comprehensive and more closely reflect the actual achievements of the project. At the same time, this methodology provided a tracking approach that can be replicated by other projects dealing with building energy efficiency beyond Ukraine for economies in transition.

4.1.2 Relevance

The project design aligned with country priorities by contributing to Ukraine achievement of its Low Emission Development Strategy (LEDS)⁴³. The project was also aligned with Ukraine's commitment to the United Nations Framework Convention on Climate Change and the Paris Agreement, and Ukraine's accompanying Nationally Determined Contribution⁴⁴ (NDC) that specifically articulated the need for international financial support to enable the development of a sustainable system to reduce GHG emissions from public buildings. Some local governments prioritized the transition and signed the EU Covenant of Mayors initiative and adopted their own Sustainable Energy Action Plans (SEAPs) with GHG emissions reduction targets.

Cooperation across their complex government administration and government institutions has been a top priority for the EEPB project. From the outset, the project engaged a wide range of government actors to

⁴³ https://unfccc.int/sites/default/files/resource/Ukraine_LEDS_en.pdf

⁴⁴ https://unfccc.int/sites/default/files/NDC/2022-06/Ukraine%20First%20NDC.pdf

build understanding and support across cities and ministries.

As project implementation advanced in the second half of the project period (after its suspension), the project team worked in close collaboration with local government officials and direct beneficiaries, facilitating alignment with local development plans. Almost all stakeholders were highly satisfied with the interventions addressing their needs, while some were not satisfied with specific details, such as in the case of the NEMIS implementation.

Communications were also improved when the project team was restructured in the second half of the project, reaching large numbers of citizens through virtual and in-person activities, as well as written documents, TV presentations leading to increased awareness. In fact, community support remained high even as community priorities shifted during full scale invasion.

4.1.3 Effectiveness

The complex nature of the EEPB project required an extensive network of partnerships to ensure its success. To that end, the project surpassed its target for the number of partnerships established, surpassing its target of 10 to partnering with 43 municipalities and cities to implement the ESCO model, laying a strong foundation for the project's implementation and supporting its sustainability. In addition to the relationships already mentioned with the SAEE and other members of the Project Board, the project developed partnerships with the ESCO Association, the Business Development Fund, and commercial banks.

The major investment of the project focused on the implementation of infrastructural EEPB projects in public buildings and utilities employing the ESCO model (Component 3) and demonstration of the implementation of EPC modality for energy efficiency initiatives in public buildings in different cities and municipalities (Outcome 3: Increased adoption and implementation of EE technologies, techniques, and practices in public buildings; and enhanced confidence in the viability of EE projects in public buildings).

With the project's extension, targets were surpassed and most of EEPB EE infrastructural interventions were implemented. The completed ESCO projects were well received by all key stakeholders (especially local governments), who were appreciative of the high quality and crucial capacity and support provided by UNDP. Some obstacles arose with governmental procedures, logistical challenges, but most issues were operational and solved with the support of the project team.

The ESCO projects demonstrated their impact on the reduction of GHG emission and contributed to reporting to the European Union on the GHG reductions. In some cases a concerted effort to raise citizen awareness (such as, study tours, TV, promotions, and online) was made. The Project kept track of people reached by communication efforts through the UNDP system IMRP. The data included website traffic and social media reach. Total number of people reached is 187,306 people⁴⁵. To create an enabling environment for these two main objectives of the project, two underlying efforts were conducted to ensure a strong financial mechanism (Component 2). For example, the Project established two additional FSMs

⁴⁵ Project progress table (xls.).

by concluding responsible party agreements with the Business Development Fund and the State Agency on Energy Efficiency and Energy Savings. ESCO Factoring financial mechanism was initiated in 2019 and 192 contracts were signed in 2019-2021, attracting USD 1.2 million investments in energy-efficient measures in public buildings. Also, supportive governmental policies, regulations and procedures were implemented (Component 1): The number of cities/municipalities that were directly supported by this project to develop and implement approved SEAPs as well as preliminary feasibility studies is 26 since the start of the project, and 4 cities solely in this reporting period. The total number of eligible Project supported interventions (SEAPs and preliminary feasibility studies) during 2017-2022 is 79. According to the study conducted by the Project in 2022, 213 municipalities/local communities have adopted energy management plans, and 285 of EE projects in public buildings financed either through the FSM; or by private sector and ESCO investment.

4.1.4 Efficiency

The project management structures were well designed after the adjustments implemented during the project's restart and the support and guidance provided by the Project Board throughout.

The cumulative delivery has moved from 60.17% to 70.42% in the last 12 months (3,859,153USD out of 5,480,000 USD has been expended). It is noteworthy that in the last 3-year period, the project team has made impressive efforts to move from 47.82% of the delivery rate to the current 70.42%.

Also in the last 3 years, the project was able to leverage investments into concrete, measurable outcomes while focusing on piloting the ESCO model to decrease GHG emissions.

Analysis of project expenditures by year suggested that in 2016 there were no resources consumed, although most of the financial resources were budgeted during that period, pointing to the slow start and time consumed by setting up of project structures and implementation mechanisms.

The EEPB project contributed to significant structural changes in Ukraine, such as the development of the ESCO market framework and implementation of the first ESCO projects resulting from EEPB project intervention.

The vast majority of co-financing was 227,189,115USD, which was realized through The State Agency for Energy Efficiency and Energy Saving of Ukraine. The project role to mobilize domestic and donor financial resources were highly effective, including specific support by the international donors totalling over 522 million USD (planned 17 million USD): GIZ - Energy Efficiency in Municipalities, GIZ - Energy Efficiency in Municipalities II, IFC - Ukraine Residential Energy Efficiency Project, USAID - Municipal Energy Reform Project, as well as private financing sources: Kominbank, NEFCO, European Investment Bank, and ESCO companies within 642 energy service contracts.

4.1.5 Sustainability

Although the project had not developed a specific exit strategy, numerous activities to facilitate sustainability of project efforts have been and are being implemented including additional GEF supported

project development and new finance mechanisms. The deep engagement of government actors at all levels, including managing the project's financial mechanisms (BDF) and information systems (The State Agency on Energy Efficiency and Energy Savings), demonstrate a strong commitment of country ownership. The project aims to mobilize additional financial resources to be managed through the same financial mechanisms and support similar projects across Ukraine (more than double the 10 planned). Dozens of bylaws, regulations, legal analysis and strategic documents developed by the project and approved by relevant government offices provided a pathway for continued efforts in the future. However, a law specifically enabling some of the key obstacles, currently pending approval by the government and the Parliament of Ukraine, would facilitate scaling up of ESCO contracts.

Local ownership is clearly integrated into the process. The project's main investment into energy efficiency of public buildings facilities and installing environmentally friendly energy systems that will be maintained by ESCO companies during the contracted period (mostly 4 or 8 years) and then owned by Ukrainian public facilities. The establishment of the local EMIS systems are a strong foundation for future implementation of the NEMIS, although there was concern by some government officials about the readiness of full implementation by the small local municipalities' owned public buildings because of their human resources.

4.1.6 Gender, Inclusion, South-South and Triangular Cooperation, and Innovation

The EEPB project was designed with the understanding that there were differences in impacts on women and men, as expressed in the project's logical framework through levels of participation by women. The project implemented a complex gender strategy that achieved approx. 50% women taking part in trainings. The project had an impressive 63% of women of the total 30,204 beneficiaries. However, inclusion of other vulnerable groups were not targeted nor measured. Beyond capacity building, the project supported gender responsive policies and regulations, emphasized advancement of women's leadership and women owned SMEs, among other activities to accelerate and solidify progress towards gender equality within the energy sector.

As part of adopting a Human Rights based approach and addressing the UN principle of Leave No One Behind, the project conducted activities that were intentionally designed to support the country. The EEPB project fully considered the human rights-based approach and potentially did not lead to any adverse impacts of the rights (civil, political, economic, environmental, social or cultural) of any stakeholders, including the communities involved in the ESCO projects or wider population. The project focused on improving energy efficiency in public buildings (governmental or municipal property), instead of private buildings, which avoided any potential impact on individuals' property rights (as energy efficiency measures may require borrowing funds from lenders for EE improvements and use the property as collateral for credit purposes). Due to expected thermal and air condition improvement in public buildings, the project will help maintain comfortable and healthy workspaces for public employees, schoolchildren, hospital patients and others using public services, thus protecting their right for a healthy and safe environment. The associated reduction of CO2 emissions would also contribute to the safe environment and rational resources used.

Building the new market for ESCO required innovative approaches and tools, most significant were the financial mechanisms developed to facilitate resources channeled through the Funds or Banks and the

high level of collaboration between the private and public sector, which probably had never before occurred in Ukraine ESCO market.

From the outset, the project incorporated SSTC by integrating the learnings from the experiences of other countries, such as the UNDP-GEF Energy Efficiency Project in Croatia and some aspects in Latvia.

4.1.7 Progress towards Impact

It was not possible to demonstrate impact in achieving these longer term goals in the timeframe of this TE. Another limitation for measuring impact was the lack of data of usage prior to an ESCO intervention. However, it is clear that some evidence points to progress towards impact. Actual cumulative direct GHG emission reduction as of June 2024 for ESCO pilots was 16,052.48 tCO2e; with estimated reduction over a 20-year period at 69,190.0 tCO2e. A total of 30,204 people benefited from the project, including 63% women. Local and state-level regulations, legal analysis and strategic documents, as well as the development of local partnership for the ESCO market provide a strong foundation for continued progress towards broader impact.

4.2 Lessons Learned

The following are the main lessons learned based on the results of this Terminal Evaluation.

- Lesson #1: The ESCO model fills an important need in Ukraine. The ESCO model meets a clear need and is in high demand. Localized, alternative sources to energy and heat are urgently needed as the winter approaches and the war continues to challenge access to Ukraine's traditional energy sources. To mobilize an estimated over 788 mill. USD⁴⁶ required for the energy efficient measures of public buildings in Ukraine, the ESCO model is an effective model that will engage private sector investment and build local ownership.
- Lesson #2: Legal infrastructure is critical for ensuring timely, sustainable implementation. Laws, bylaws, and regulations create a necessary enabling environment with a pathway for continued efforts.
- Lesson #3: Credit or revolving financing for ESCO companies. A credit or revolving fund provides the mechanism for large scale-up of the ESCO model. The project has already begun to develop an ESCO fund with the BDF and some commercial banks in Ukraine. The project continues to advocate for the financial institutions to advance re-establishing ESCO funds.
- Lesson #4: Direct Implementation better supports innovation. Developing a new approach or model requires flexibility and risk-taking, which can be hampered by national execution. However, with DIM, it is necessary to include in the project design and exit strategy details about how to ensure national capacity and resources as the project is transferred to country ownership.
- Lesson #5: Adaptive management is key to success. While working in an unpredictable context, a concrete framework and agreements assists in creating a more stable environment for

⁴⁶ The Final financial statement by PMU.

implementation. At the same time, the continually changing contexts require a flexible project design and creative, adaptive project management practices to enhance efficiency and effectiveness.

- Lesson #6: Knowledge sharing and transfer supports implementation and sustainability. Particularly in the context of limited communications, travel and staff, developing processes where beneficiaries and partners can share and learn from each other and systems with user-friendly information will support learning for improved efficiency and decision-making.
- Lesson #7: Multi-stakeholder engagement is critical for buy-in and country/local ownership. Key stakeholders should be included at strategic moments relevant to their roles and the stage of the project. For example, the Project Board, with government actors who are critical for different aspects of project implementation, can guide the project from design through implementation and closure. While local government and community engagement may be more focused around the planning and implementation of a particular intervention.
- Lesson 8: Extensive and intentional capacity building supports transition to country ownership. Given that local capacity is diminishing due to the war, the project requires additional expertise to support the process in combination with trainings for staff to ensure readiness for a smooth transfer to full local ownership once the country is able.
- Lesson #9: Coordination with similar projects leverages resources and the combined efforts culminate in stronger contributions and impact. Implementing a multi-pronged project in a complex context with limited resources benefits from coordination with other projects working towards similar goals. For example, UNDP, GEF, and the IFC laid the foundation for a sound financial mechanism to support renewable energy through the Commercialization of Bioenergy Technologies in Ukraine project.
- Lesson #10: Intentional, multi-faceted strategy to gender mainstreaming results in accelerated growth of gender equality in the energy sector and would benefit other vulnerable or marginalized groups. Developing a clear strategy for inclusion of under-represented groups in the energy sector that emphasizes involvement and advancement for members will act as a catalyst towards equality and inclusion. from those groups in complex and complementary ways, such as through policy and processes, professional development and advancement,

5. Recommendations

The following recommendations were developed based on the results of this TE and further discussed during the preliminary findings workshop with UNDP staff. They are designed with the intention of being practical and actionable.

Table 13: Recommendations

		Timeframe	Responsible Party	Supporting Evidence
1.	 Revise and detail exit strategy A short exit strategy was developed in the original project document. A detailed articulation of the exit strategy will provide a roadmap to support continued efforts of the project. Activities providing support for knowledge transfer and country ownership have been and continue to be conducted through the current project. However, due to the focus on war efforts, local ownership should be delayed. Development of a phase 2 with GEF is already well underway and additional avenues for external support in this sector should be included in the detailed exit strategy. A detailed exit strategy would facilitate continued project efforts and important foundation building for efficient transfer of ownership, when the timing is appropriate. These additional activities may include: Establishing a path for continued capacity building and resources for ESCO markets (with SMEs focus); Developing a process for knowledge transfer to new locations: peer support from those who completed interventions with new locations (buddies, site visits), webinars, and how-to communications (tips sheet, best practices); Sharing portals, websites, lists of available consultants and ESCO practitioners; Ensuring alignment of the financial mechanism in accordance with the Ukraine Investment Framework; and/or Before the end of the project, conduct a workshop to develop and share the lessons learned with relevant stakeholders to facilitate replicating and scaling up of the project's efforts. 	By December 2024	UNDP	Criteria: Effectiveness and Sustainability
2.	Improve procedures for faster delivery UNDP should revise its internal requirements to allow for decision-making processes to occur in a timely manner for the immediate needs within Ukraine, particularly regarding business contracts that involve financial mechanisms linking banks and the Business Development Fund (BDF). The current market in Ukraine is dynamic and unpredictable. UNDP should create a process with signed agreements that will allow for fast, nimble decision-making to ensure stability	Immediate and Continual	UNDP	Criteria: Efficiency

	and timely support to project implementation.			
3.	 3. Enhance sharing and transferring knowledge across the region and globally Learnings should continue to be shared among others within the region and globally, further developing what was mentioned in the exit strategy. In addition to the study tours and other ongoing activities, this may be accomplished through: Focused written communications, webinars, and conferences, among other activities. Improved webpage to provide information in a user-friendly organization, including lessons learned, FAQs and/or practical guides for those planning and implementing ESCO projects. Established mechanism for sister ESCO projects or communities, where participants share concrete learnings and act as sounding boards. Participants may be similar level officials from other countries with Ukraine partners, with an emphasis on creating opportunities for women, people with disabilities, and others from vulnerable groups. 		UNDP	Criteria: Effectiveness, Sustainability, Gender and Women's Empowerment, and Leave No One Behind
4.	4. Bolster and accelerate the establishment of NEMIS UNDP should develop a separate project that accelerates the procurement of adequate information software and builds the capacity of staff to establish the National Energy Management Information System, as well as facilitate approved procedures with SAEE and Ministry for Communities, Territories, and Infrastructure Development of Ukraine - the Ministry of Infrastructure). This will facilitate streamlined information on energy use and quickly inform decision-making.		SAEE	Criteria: Effectiveness
5.	 5. Strengthen capacity and seek economies of scale The ESCO model would be more cost effective and have a bigger impact with increased awareness, capacity, and market efficiencies. Conduct an analysis of ESCO model cost efficiencies, including the number o strengthened SMEs to competitively compete for the contracts, feasibility for empowering women/ vulnerable group owned SMEs, and pathways for careers in the field for women, people with disabilities, and others from vulnerable groups. Strengthen the capacities and awareness of small and medium cities in the field o energy management as well as understanding the Energy Performance Contracting (EPC) and Energy Service Company (ESCO) models, ensuring a sufficient number or energy management as the sufficiency of the		Energy Funds	Criteria: Effectiveness, Gender and Women's Empowerment, and Leave No One Behind

	well- trained professionals in the field of EE and management.			
 6. Enhance community involvement and women-owned organizations To further support UNDP in achieving its goals of gender equality and leave no one behind, future projects should: Continue training city representatives on EPC and ESCOs with specific focus on participants who are women, people with disabilities, and from other vulnerable or underrepresented groups. Continue training SMEs to expand their capacity to effectively manage more or larger ESCO projects. Continue the stronger preference to women-owned SMEs or those with at least 50% women on staff at various levels of responsibility, as well as other marginalized groups. Build capacity and prioritize opportunities for people with disabilities and from other vulnerable groups to advance in the energy management sector, similar to the current Gender Action Plan. 		Continual	UNDP/ Energy Funds/ Cities	Criteria: Effectiveness, Gender and Women's Empowerment, and Leave No One Behind
7.	 7. Strengthened M&E design The M&E design should provide a roadmap for implementation with a framework that measures progress. Although the project was well-designed, there remains space for improvement. Future projects should include: Theory of Change that clearly articulates the assumptions, context and pathways to change that will lead to achieving its higher level goals. Robust Results Framework with indicators focused on: Gender equality and LNOB, including indicators in the results framework that reflect the gender strategy and develop a similar strategy with indicators for other vulnerable groups. A few specially selected qualitative indicators designed to provide depth of understanding and demonstrate progress, without overburdening staff. 		UNDP	Criteria: Effectiveness and Efficiency

ANNEXES

- Annex A: TE ToR (excluding ToR annexes)
- Annex B: TE Mission Itinerary
- Annex C: List of persons interviewed
- Annex D: List of documents reviewed
- Annex E: Evaluation Question Matrix
- Annex F: Guiding Questions for Interviews
- Annex G: Financing table
- Annex H: TE rating scales
- Annex I: Signed UNEG Code of Conduct form
- Annex J: Signed TE Report Clearance form
- Annex K: Total number of stakeholders
- Annex L: TE Logical Framework Status Update
- Annex M: TE Audit Trail (in separate file)
- Annex N: GEF_Core indicators_Tracking Tools (in separate file)
- Annex O: ESCO Pilots GHG Calculation prepared by the Project Team (in separate file)
- Annex P: Action Plan for the Project prepared by the Project Team (in separate file)
- Annex Q: Object by Object Analysis of ESCO pilots, Energy and Savings prepared by the Project Team (in separate file), provided by the Project Team.
- Annex R: List of energy managers trainings certificates prepared by the Project Team (in separate file)

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Annex A: Terms of Reference

TERMINAL EVALUATION TERMS OF REFERENCE			
Project name:	Removing Barriers to Increase Investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities (EEPB)		
Post title:	International Consultant for the Terminal Evaluation (TE) of UNDP-GEF project Removing Barriers to Increase Investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities		
Type of contract:	Individual Contract (IC)		
Assignment type:	International Consultant		
Country / Duty Station:	Home Based with one mission of estimated 5 working days in Ukraine.		
Expected places of travel (if applicable):	Kyiv, Ukraine. Other Ukrainian cities to defined during the mission preparation.		
Languages required:	English, knowledge of Ukrainian (or Russian) is an asset		
Starting date of assignment:	15 July 2024		
Duration of Contract:	Two months		
Duration of Assignment:	25 working days spread over two months period		
Evaluation Manager:	Lesia Shyshko, Team Leader, Strategic Planning, Partnerships and RBM Unit		
Assignment Coordinator:	Ievgen Spivakovskyi, Programme Analyst, Energy and Environment		
Payment arrangements:	Lump-sum contract (payments linked to satisfactory performance and delivery of results)		
Administrative arrangements:	The consultant is responsible for any equipment and other materials needed for the assignment.		
Evaluation method:	Roster Selection followed by desk review with validation interview.		

Please note that UNDP is not in the position to accept incomplete applications - please make sure that your application contains all details as specified below in this notice.

1. INTRODUCTION

In accordance with UNDP and GEF Monitoring & Evaluation policies and procedures, all full and medium sized UNDP-supported 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 full-sized UNDP-GEF project *Removing Barriers to Increase*

Investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities (PIMS 4114, GEF ID #5357) implemented through the UNDP Ukraine.

The project started on 14 December 2016 (the Project Document signature date) with the project team being hired starting in April 2017. The project was earlier suspended in April 2020. The decision to suspend was done out of an abundance of caution following the investigations of alleged procurement irregularities on another UNDP GEF-funded project on biomass in the country where allegations ended up being substantiated. The suspension was lifted in April 2021 and the project entered into the pre-start phase. A plan with pre-start activities was completed by September 3, 2021, and it was then followed by approval of the UNDP NCE Executive Coordinator to start full implementation as of September 17, 2021. Just when the new project team was starting to get the project back on track, the War in Ukraine since 24 February 2022 slowed down the project implementation. Due to the two aforementioned force major reasons the project was extended by 3 years to 14 December 2024.

The project is now in its final year of implementation and the TE needs to be completed by 9 September 2024 (this includes final TE report, audit trail and management response to the TE).

The objective of this project is to accelerate implementation of energy efficiency measures in public buildings in Ukraine through the Energy Service Company (ESCO) modality, utilizing Energy Performance Contract (EPC), by leveraging significant private sector investment over its implementation period (2016

- 2024) as well as by introducing nationwide energy management information systems (EMIS) for Ukraine.

The TE process must follow the guidance outlined in the document '<u>Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects</u>'.

Project title:	Removing Barriers to Increase Investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities			
UNDP PIMS Project ID:	4114	Project financing:	At endorsement (\$US) 62,153,195	
Quantum Project ID:	00095405	GEF financing:	5,480,000	
Country	Ukraine	UNDP cost-sharing (TRAC):	161,200 for extension period	
Region	CIS	National Government (co- financing):	76,666,666	
		Local Government (cofinancing):	0	
		UNDP (co-financing):	0	
		INGOs, NGOs and Private Sector	64,324,071	
Focus Area	Green, renewable energy, emissions, climate mitigation	Total project budget:	5,641,200	
GEF Focal Area Strategic Program	Climate Change Mitigation	Total project expenditures by the time of TE	3.93	

Executing Ag	ency	UNDP	% delivery	72
Other Partner involved	Partners	Ministry for Communities, Territories, and Infrastructure Development of Ukraine	ProDoc signature (project start date)	14 December 2016
	InitiastituctureDevelopmentof UkrainePlaState Agency on EnergyReEfficiency and EnergySavings of Ukraine#gra		Planned closing date	14 December 2021
		Revised closing date	14 December 2024	
		# of non-cost extensions granted	2 for 36 months in total	

2. PROJECT BACKGROUND AND CONTEXT

The Ukrainian economy is characterized by high-energy consumption and high carbon intensity throughout almost all sectors of the economy, including both residential and public buildings. The building sector (residential, commercial and public services) consumes about 37% of total heat and 25% of all electricity in Ukraine, making this sector a major contributor to greenhouse gas emissions. Energy efficiency in buildings in Ukraine is on average approximately three to four times lower than that in West European countries.

The project consists of the following four components:

- Component 1: To formulate and introduce a streamlined and comprehensive legal and regulatory framework to promote energy efficiency in public buildings through strengthening of monitoring and enforcement mechanisms.
- Component 2: To promote private investment in energy efficiency in public buildings through appropriate catalytic financial incentives, including the establishment of a Financial Support Mechanism (FSM).
- Component 3: To implement at least 10 pilot projects in selected public buildings to demonstrate the energy and cost-saving potential of energy efficiency measures.
- Component 4: To establish an institutional basis and comprehensive nation-wide Energy Management Information System for public buildings in Ukraine to support energy efficiency in public buildings.

It was expected to implement at least 10 pilot EPC energy savings projects in 10 different municipalities in Ukraine and achieve cumulatively 2,34 energy savings; these savings will be resulted in a reduction of 8,893 tons of CO₂ equivalent over the 20-year equipment lifetime. The project was expected to achieve this target by introducing a conducive regulatory framework for the establishment and operation of ESCOs through the EPC modality and by putting in place a financial support mechanism that, together, will facilitate private sector participation in implementing energy efficiency measures in public buildings. This was to be combined with a single nationwide energy consumption database for energy consumption in public buildings and energy management information system which will facilitate additional investments in energy efficiency.

The main current achievements of the Project (as of 2024):

CO2 savings

Actual cumulative direct energy savings as of July 2023 for ESCO pilots are 15,504.53 CO2 with estimated savings over a 20year period – 30,477.64 CO2 (without destroyed/damaged and objects with issues), resulting from refined and updated calculations. The estimated 20-year period amount is based only on baseline calculation and doesn't envisage correction by actual savings. The information on the CO2 emission reductions for the period July 2023-June 2024 will be available in June 2024 as the Project conducts verification of saving after the end of the heating season, when the EPC payments would be settled.

In total ESCO pilots in 53 public buildings were supported by the Project in 10 cities: Nizhyn, Borodyanka, Slavutych, Odesa, Drohobych, Savran, Korosten, Pervomaiskyv, Dubno, and Severodonetsk before the suspension, benefiting over 30000 people. 49 objects are educational facilities, 2 healthcare buildings, street lighting, and one library.

These 53 pilots leveraged 19,2 million UAH (0,8 mln USD according to 2019 exchange rate) financing from ESCO companies ESCO-BUD LTD, KYIVESKO LTD, PE HYDROMONTAGE, ENERGY EFFICIENT ODESA LTD, "ENERGOZBEREZENNIA LVIV" LTD, INTERENERGO SERVICE LTD, ESCO UA LTD, which were selected according to Ukrainian transparent tender system Prozorro. Among these 53 pilots that were concluded before the Project's suspension 23 are already successfully completed (ahead of schedule), 18 continue to receive energy-saving services according to the contracts, 2 are not operational due to legal issues, and 10 are not operational due to military actions.

Additionally, after the Project's suspension was lifted, it continued to support cities with ESCO pilots, resulting in 32 ESCO contracts so far, attracting 3,6 mln USD from ESCO companies of the 32 ESCO contracts, 19 pertain to comprehensive energy modernization (46% heat energy savings), while 13 ESCO contracts involve the installation of solar power stations in hospitals and water facilities for the population (with up to 17% electricity savings).

Investments in EE

To support investments in ESCO the Project designed an ESCO Factoring mechanism that enabled ESCO companies to receive financing from Ukrainian banks.

During 2019-2021 ComInBank financed 192 EPC contracts with a total volume of UAH 41.6 million (approximately US\$1.54 million). The local ESCO's invested an additional UAH 32 million (around US\$1.18 million) during these years.

In 2022, the ESCO Factoring model was practically non-functional due to the ongoing war in Ukraine. The banking risk departments assessed the risk of non-payments by ESCO contracts from local municipalities as "very high." As a result, no new ESCO Factoring contracts were signed after the start of full-scale invasion.

The project also supported Kaniv city in establishing a municipal ESCO company. This company successfully carried out a full renovation of a kindergarten and a school, using \$140,000 of its own funds and securing an \$800,000 loan from NEFCO. So, additional investments in EE of US \$940,000 were catalyzed by the project.

Furthermore, the project conducted feasibility studies and prepared technical designs, which facilitated Ternopil city in attracting a EUR 30.5 million loan from the European Investment Bank (EIB) to completely renovate 39 educational public buildings in Ternopil city.

At the moment the project is piloting two financial mechanisms for ESCO support and de-risking the investments in ESCO projects: the Finance Support Mechanism with the State Agency for Energy Efficiency and Energy Saving of Ukraine and Affordable Finance Facility with the Business Development Fund. The noticed mechanisms are anticipated to attract up to US \$2 million in additional investments through the ESCO model.

Energy savings

As of July 2023, 22,213.40 MWh were saved cumulatively since the Project start. The information on the savings for the period July 2023-June 2024 will be available in June 2024 as the Project conducts verification of savings after the end of the heating season, when the EPC payments would be settled.

Green Jobs

1,003 green jobs (energy managers in municipalities) were created in 2018-2019. After the suspension lifting, 1,619 green jobs in Odesa city, Rivne, and Kirovohrad regions were created due to procurement of energy management systems for public buildings in these regions. A series of 40 webinars on energy monitoring and energy management was held to train these energy managers in June – September 2022, where among those who received certificates 56% were men and 46% women.1,055 green jobs (energy managers in municipalities) were created in 2022 through a series of 10 webinars on energy managers who received certificates 56% are men and 46% women. Where 821 green jobs (energy managers in municipalities) were created through a series of webinars that was held in December 2023. Among the 821 newly trained energy managers who received certificates 46% are men and 54% women.

64 green jobs (trainers for energy auditors in buildings in tech designers) were created through a series of webinars held in February – April 2024. Among the 64 certified participants 64% men and 36% women.

Legislation and studies

The Project provided support to beneficiaries drafting secondary legislation acts related to the implementation of Law on Energy Efficiency:

- Decree of the Cabinet of Ministers "On the details on determining of baseline concerning buildings where violation of the object's operation mode was recorded (downtime, stoppage of work, change of functional purpose) from 2 June 2024 #382 is adopted
- Draft decree of the Cabinet of Ministers of Ukraine "On the creation of favorable conditions for increasing the energy efficiency of community infrastructure during the period of the legal regime of martial law in Ukraine and within 90 days from the date of its termination or cancellation", as well as

a draft explanatory note to the policy and a list of recipient authorities of the note" from 19 June 2023 #621 is adopted Draft resolution of the CMU "On the approval of the Procedure for the functioning of the National Energy Efficiency Monitoring System and the organization of electronic information exchange, as well as the list of information owners, information exchange participants who provide information to the National Energy Efficiency Monitoring System (including the definition of the system's technical administrator)" - under consideration at Ministry for Communities, Territories, and Infrastructure Development of Ukraine. Decree of the Cabinet of Ministers of Ukraine "On the approval of the Procedure for calculating the target indicator of the annual reduction of energy consumption for obligated parties" - under consideration at SAEEDraft Decree of the Ministry of Energy of Ukraine "On approval of the Methodology for determining the target indicator of annual reduction of energy information, monitoring and evaluating the implementation of the National Energy Efficiency Action Plan" - under consideration at Ministry for Communities, Territories, and Infrastructure Development of Ukraine. Decree of the Ministry of Energy of Ukraine "On approval of the procedure for collecting primary information, monitoring and evaluating the implementation of the National Energy Efficiency Action Plan" - under consideration at Ministry for Communities, Territories, and Infrastructure Development of Ukraine.Draft Decree of the Ministry of Energy of Ukraine "On approval of the procedure for maintaining the roster of national authorities and local governments where an energy management system is implemented" - under consideration of Ministry of Energy

- Draft order of the Ministry of Energy of Ukraine "On approval of the Procedure for maintaining the register of business entities that have received certificates of energy and/or environmental management systems" - under consideration of Ministry of Energy
- Draft Decree of the Cabinet of the Ministers of Ukraine "On approval of the Procedure for maintaining and publishing a
 database of extracts from energy audit reports, independent monitoring of extracts from energy audit reports,
 independent verification of energy audit reports". under consideration of Ministry for Communities, Territories, and
 Infrastructure Development of Ukraine.
- Explanatory note to the draft resolution of the Cabinet of Ministers of Ukraine "On approval of the procedure for monitoring the implementation of the thermal modernization strategy of buildings for the period up to 2050"
- Draft procedure for incentivizing employees of the budgetary sphere for the effective use of energy resources at the objects of the budgetary sphere.
- Analysis of regulatory impact and Draft Resolution of the Cabinet of Ministers of Ukraine "On setting the amount of the fee for independent verification of energy audit reports at the request of the energy audit requester". The project provided expert support in the development of the . under consideration of beneficiary
- Draft Law of Ukraine "On Amendments to Some Laws of Ukraine Regarding the Creation of Conditions for the Implementation of the National Information System for Energy Monitoring of Objects of State Authorities and Local Self-Government Bodies" (with explanatory note and information on the impact of the draft law). - not adopted, waiting Parliament's reviewDraft order of the Ministry of Energy "On the Procedure for maintaining and publicizing the database of energy auditors" under consideration of Ministry for Communities, Territories, and Infrastructure Development of Ukraine
- Draft order of the Ministry of Energy "On approval of the Procedure for forming, publishing and updating the list of energy service providers, potential energy service facilities". under consideration of for Communities, Territories, and Infrastructure Development of Ukraine
- Resolution of the CMU "On Approval of the Procedure for Monitoring and Evaluation of the Results of Achievement of the Target Indicator of the Annual Reduction of Energy Consumption"
- Order of the CMU "On determination of energy efficiency classes of products (goods) for the purpose of use during public procurement. under consideration of Ministry for Communities, Territories, and Infrastructure Development of Ukraine
- Draft Laws No. 4356 and 4357 dated November 10, 2020, which remove a number of obstacles for ESCO. on the review of Parliament
- The draft law amending the Law on Energy Efficiency regarding the mandatory introduction of an energy monitoring system and an energy management system. not adopted, didn't pass the Parliament's review

The Project prepared the following reports and knowledge materials:

- 1. Status of implementation of systems of energy management in Ukraine
- 2. Reports on Energy First Principle
- 3. Energy efficiency classes of energy-consuming products
- 4. Report on the analysis of the state of training of energy auditors in Ukraine
- 5. An Overview of the Best Practices of ESCO Market Design and Recommendations for Ukraine
- 6. Recommendations on Financial Incentives Schemes to Support ESCO Market Mechanism, Including Analysis of all Options Aimed at Supporting ESCO Market Development
- 7. Performance assessment of pilot ESCO projects in partner cities. Successful experience of the implementation of ESCO projects.
- 8. Pre-feasibility studies for the implementation of the solar power plant model through the ESCO modality
- 9. Analysis of legislative barriers to ESCO
- 10. Analysis of legislation on energy monitoring

Energy Audits

The project conducted 36 energy audits before suspension: 26 were related directly to the Project's ESCO activities before the suspension. 25 of these were successful and resulted in signed EPCs, 1 energy audit in Zhytomyr city, that was intended to use during piloting of ESCO-leasing mechanism hasn't positive outcome. The rest 10 audits were related to other Project goals (e.g. SECAPs and FSM) and also brought some positive outcomes such as EIB loan in Ternopil, NEFCO loan in Kaniv, renewable energy investments in Nizhyn and school refurbished by Municipal ESCO in Mykolaiv.

After the suspension the Project completed 61 more energy audits, 32 resulted in ESCO tenders. During 2017-2019, the Project directly contributed to creation of two Sustainable Energy Action Plans (SEAPs) for Kaniv and Nizhyn cities. During the 2022, due to the Russian Federation invasion, special amendments were made for this type of interventions allowing to cover design of Sustainable Energy Recovery Plans and design of technical documentation instead of SEAPs. So, the Project supported 25 cities with pretechnical design documents for 56 pilots on solar power in healthcare sector and Water Facilities sector and 4 cities with pre-technical design documents for 4 pilots in water supply system, as well as pretechnical design documents for 7 pilots on autonomous gas/bio boilers in public buildings

Additionally, the Project supports Koziatyn, Kremenchuk, Kryvyi Rih, and Berazhany with drafting energyrelated parts of the SEAPs.

EMIS

During 2017-2019, the Project directly supported introduction of EM at municipal level for 54 cities and 25 villages for 784 buildings in total. The Project in 2022 supported two entire oblasts (regions) of Ukraine (66 cities/communities) and Odesa city for 7,020 public buildings in total.

In addition to the GEF grant of US\$5,48 million, the project leveraged over US\$141million of co-financing and the terminal evaluation should assess to what extent this co-financing is materialized.

The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the

UNDP Evaluation Guidelines^[1] and UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported GEF-financed

<u>Projects</u>^[2]_through assessing the achievement of the EEPB project results, and design of lessons that can both improve the sustainability of the achieved results of the project, and assist in the overall development of UNDP's programmatic approach in the sphere of energy efficiency.

3. TE PURPOSE

The TE report will assess the achievement of project results against what was expected to be achieved, and draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming. The TE report promotes accountability and transparency, and assesses the extent of project accomplishments.

4. EVALUATION APPROACH AND METHODOLOGY

An overall approach and method for conducting project terminal evaluations of UNDP-supported GEFfinanced projects has developed over time. The evaluator is expected to frame the evaluation effort using the criteria of **relevance**, effectiveness, efficiency, sustainability, and impact (see Annex C), as defined and explained in the <u>UNDP Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEFfinanced Projects</u>. A set of questions covering each of these criteria have been drafted and are included with this TOR. The evaluator is expected to amend, complete and submit the Evaluation Matrix as part of an evaluation inception report, and shall include it as an annex to the final report.

The TE report must provide evidence-based information that is credible, reliable and useful. The TE team will review all relevant sources of information including documents prepared during the preparation phase (i.e. PIF, UNDP Initiation Plan, UNDP Social and Environmental Screening Procedure/SESP) the Project Document, project reports including annual PIRs, project budget revisions, lesson learned reports, national strategic and legal documents, and any other materials that the team considers useful for this evidence-based evaluation. The TE team will review the baseline and midterm GEF focal area Core Indicators/Tracking Tools submitted to the GEF at the CEO endorsement and midterm stages and the terminal Core Indicators/Tracking Tools that must be completed before the TE field mission begins.

The TE team is expected to follow a participatory and consultative approach ensuring close engagement with the Project Team, government counterparts (the GEF Operational Focal Point), Implementing Partners, the UNDP Country Office(s), the Regional Technical Advisor, direct beneficiaries and other stakeholders.

Engagement of stakeholders is vital to a successful TE. Stakeholder involvement should include interviews with stakeholders who have project responsibilities, including but not limited to (Ministry for

Communities, Territories, and Infrastructure Development of Ukraine, State Agency on Energy Efficiency and Energy Savings of Ukraine, partner-municipalities); executing agencies, senior officials and task team/component leaders, key experts and consultants in the subject area, Project Board, project beneficiaries, academia, local government and CSOs, etc. Additionally, the TE team is expected that the evaluator will conduct one 5 working days field visit to Ukraine. The agenda for the visit will be discussed and defined jointly with the UNDP Team during the preparation of inception report. Interviews (online and offline) will be held with the following organizations:

- 1) Ministry for Communities, Territories, and Infrastructure Development of Ukraine
- 2) State Agency on Energy Efficiency and Energy Savings of Ukraine
- 3) Recipients of UNDP support (e.g. municipalities, a list to be discussed during the inception report preparation)

The specific design and methodology for the TE should emerge from consultations between the TE team and the above-mentioned parties regarding what is appropriate and feasible for meeting the TE purpose and objectives and answering the evaluation questions, given limitations of budget, time and data. The TE team must use gender-responsive methodologies and tools and ensure that gender equality and women's empowerment, as well as other cross-cutting issues and SDGs are incorporated into the TE report.

The final methodological approach including interview schedule, field visits and data to be used in the evaluation must be clearly outlined in the TE Inception Report and be fully discussed and agreed between UNDP, stakeholders and the TE team.

The evaluator will review all relevant sources of information, such as the project document, pre-start report, project reports – incl. Annual PIR and other Reports (Ukraine section), project budget revisions, midterm review, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, and any other material that the evaluator considers useful for this evidence-based assessment. A list of documents that the project team will provide to the evaluator for review is included in TOR Annex B of this Terms of Reference.

The final report must describe the full TE approach taken and the rationale for the approach making explicit the underlying assumptions, challenges, strengths and weaknesses about the methods and approach of the evaluation.

5. DETAILED SCOPE OF WORK

The International consultant will assess the following four categories of national project progress. See the Guidance for Conducting Final Evaluations of UNDP-Supported, GEF-Financed Projects for additional information. The Findings section of the TE report will cover the topics listed below. A full outline of the TE report's content is provided in ToR Annex D.

The asterisk "(*)" indicates criteria for which a rating is required.

Findings

- i. Project Design/Formulation
 - National priorities and country driven-ness
 - Theory of Change
 - Gender equality and women's empowerment
 - Social and Environmental Standards (Safeguards)
 - Analysis of Results Framework: project logic and strategy, indicators
 - Assumptions and Risks
 - Lessons from other relevant projects (e.g. same focal area) incorporated into project design
 - Planned stakeholder participation
 - Linkages between project and other interventions within the sector
 - Management arrangements

ii. Project Implementation

- Adaptive management (changes to the project design and project outputs during implementation)
- Actual stakeholder participation and partnership arrangements
- Project Finance and Co-finance
- Monitoring & Evaluation: design at entry (*), implementation (*), and overall assessment of M&E (*)
- Implementing Agency (UNDP) (*) and Executing Agency (*), overall project oversight/implementation and execution (*)
- Risk Management, including Social and Environmental Standards (Safeguards)

iii. Project Results

- Assess the achievement of outcomes against indicators by reporting on the level of progress for each objective and outcome indicator at the time of the TE and noting final achievements
- Relevance (*), Effectiveness (*), Efficiency (*) and overall project outcome (*)
- Sustainability: financial (*), socio-political (*), institutional framework and governance (*), environmental (*), overall likelihood of sustainability (*)
- Country ownership
- Gender equality and women's empowerment
- Cross-cutting issues (poverty alleviation, improved governance, climate change mitigation and adaptation, disaster prevention and recovery, human rights, capacity development, South-South cooperation, knowledge management, volunteerism, etc., as relevant)
- · Were the national project's objectives and components clear, practical, and feasible within the project's time frame
- GEF Additionality
- Catalytic Role / Replication Effect
- Progress to impact

Main Findings, Conclusions, Recommendations and Lessons Learned

- The TE team will include a summary of the main findings of the TE report. Findings should be presented as statements of fact that are based on analysis of the data.
- The section on conclusions will be written in light of the findings. Conclusions should be comprehensive and balanced statements that are well substantiated by evidence and logically connected to the TE findings. They should highlight the strengths, weaknesses and results of the project, respond to key evaluation questions and provide insights into the identification of and/or solutions to important problems or issues pertinent to project beneficiaries, UNDP and the GEF, including issues in relation to gender equality and women's empowerment.
- Recommendations should provide concrete, practical, feasible and targeted recommendations directed to the intended users of the evaluation about what actions to take and decisions to make. The recommendations should be specifically supported by the evidence and linked to the findings and conclusions around key questions addressed by the evaluation.
- The TE report should also include lessons that can be taken from the evaluation, including best practices in addressing
 issues relating to relevance, performance and success that can provide knowledge gained from the particular
 circumstance (programmatic and evaluation methods used, partnerships, financial leveraging, etc.) that are applicable
 to other GEF and UNDP interventions. When possible, the TE team should include examples of good practices in project
 design and implementation.
- It is important for the conclusions, recommendations and lessons learned of the TE report to incorporate gender equality and empowerment of women.

The TE report will include an Evaluation Ratings Table, as shown below:

ToR Table 2: Evaluation Ratings Table for Removing Barriers to Increase Investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities

Monitoring & Evaluation (M&E)	Rating ³
M&E design at entry	
M&E Plan Implementation	
Overall Quality of M&E	
Implementation & Execution	Rating
Quality of UNDP Implementation/Oversight	
Quality of Implementing Partner Execution	
Overall quality of Implementation/Execution	
Assessment of Outcomes	Rating
Relevance	

³ Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight & Execution, Relevance are rated on a 6 point scale: 6=Highly Satisfactory (HS), 5=Satisfactory (S), 4=Moderately Satisfactory (MS), 3=Moderately Unsatisfactory (MU), 2=Unsatisfactory (U), 1=Highly Unsatisfactory (HU). Sustainability is rated on a 4-point scale: 4=Likely (L), 3=Moderately Likely (ML), 2=Moderately Unlikely (MU), 1=Unlikely (U)

Effectiveness	
Efficiency	
Overall Project Outcome Rating	
Sustainability	Rating

Financial resources	
Socio-political/economic	
Institutional framework and governance	
Environmental	
Overall Likelihood of Sustainability	

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 poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender.

Impact

The evaluator will assess the extent to which the national 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.

6. TIMEFRAME

The total duration of the TE will be approximately 25 working days over a time period of July 15, 2024 – September, 14 2024 (10 of weeks) starting on July 15, 2024. The tentative TE timeframe is as follows:

Timeframe	Activity
20 June 2024	Application closes
5 July 2024	Selection of TE team
15 July 2024	Preparation period for TE team (handover of documentation)
20 July 2024, 5 days	Document review and preparation of TE Inception Report
30 July 2024, 5 days	Finalization and Validation of TE Inception Report; latest start of TE mission
5 August 2024, 5 days	TE mission: stakeholder meetings, interviews, field visits, etc.
9 August 2024	Mission wrap-up meeting & presentation of initial findings; earliest end of TE mission
21 August 2024, 5 days	Preparation of draft TE report
25 August 2024	Circulation of draft TE report for comments
30 August 2024	Incorporation of comments on draft TE report into Audit Trail & finalization of TE report
5 September 2024	Preparation and Issuance of Management Response

9 September 2024	Expected date of full TE completion		
Options for site visits should be provided in the TE Inception Report.			

Implementation arrangements

The principal responsibility for managing this evaluation resides with the UNDP CO in Ukraine. The Commissioning Unit will contract the evaluators and ensure the timely provision of per diems and travel arrangements within the country for the TE team. The Project Team will be responsible for liaising with the Evaluators team to set up stakeholder interviews, coordinate with the Government etc.

Duty station

Home-based.

Travel

5 working days field visit to Ukraine (not including additional days for travel). The exact dates of the mission to Ukraine should be discussed with the evaluator at the start of the assignment, the 5 working days mission should take place no later than 10 September 2024.

7. EVALUATION DELIVERABLES

The evaluation team is expected to deliver the following:

#	Deliverable	Description	Timing	Responsibilities
1	TE Inception Report	TE team clarifies objectives, methodology and timing of the TE	No later than 1 week before the TE mission: 30 July 2024	TE team submits Inception Report to Commissioning Unit and project management
2	Presentation	Initial Findings	End of TE mission: 9 August 2024	TE team presents to Commissioning Unit and project management
3	Draft TE Report	Full draft report (using) guidelines on report content in ToR Anne _D with annexes	Within 2 weeks of end of TE mission: 21 August 2024	TE team submits to Commissioning Unit; reviewed by RTA, Project Coordinating Unit, GEF OFP
5	Final TE Report* + Audit Trail	Revised final report and TE Audit trail in which the TE details how all received comments have (and have not) been addressed in the final TE report (See template in ToR Annex I)	Within 1 week of receiving comments on draft report: 9 September 2024	TE team submits both documents to the Commissioning Unit

*When submitting the final evaluation report, the evaluator is required also to provide an <u>'Audit Trail'</u>, detailing how all received comments have (and have not) been addressed in the final evaluation report.

*All final TE reports will be quality assessed by the UNDP Independent Evaluation Office (IEO). Details of the IEO's quality assessment of decentralized evaluations can be found in Section 6 of the UNDP Evaluation Guidelines.^[3]

8. TE ARRANGEMENTS

The principal responsibility for managing the TE resides with the Commissioning Unit. The Commissioning Unit for this project's TE is the **UNDP Country Office in Ukraine**.

If it is not possible to travel to or within the country for the TE mission then the terminal evaluation is to be carried out virtually, and then consideration should be taken for stakeholder availability, ability or willingness to be interviewed remotely.

The Commissioning Unit will contract the evaluator and ensure the timely provision of per diems and travel arrangements within the country for the TE team. The Project Team will be responsible for liaising with the TE team to provide all relevant documents, set up stakeholder interviews, and arrange field visits.

9. TE TEAM COMPOSITION

International Consultant should be an international expert with experience and exposure to energy efficiency projects and evaluations in the Europe & CIS region and other regions globally.

The evaluator cannot have participated in the project preparation, formulation and/or implementation (including the writing of the project document), must not have conducted this project's Mid-Term Review and should not have a conflict of interest with the project's related activities.

The International consultant must present the following qualifications:

- At least a Master's degree in Engineering, Energy, Environment, Economics, Law, Business Administration or other closely related field.
- At least 10-years work experience and proven track record with policy advice and/or project development/implementation in energy efficiency, preferably in municipal (buildings) sector including experience with ESCO modality in transition economies.
- Practical experience (within the last seven years) in the mid-term or final performance evaluation of at least five international and/or regional projects funded by multilateral agencies (UNDP, GEF) or other international agencies; including experience with SMART indicators;
- Prior experience in designing projects and initiatives in the field of energy efficiency, either for UNDP or other international agencies.
- Experience or knowledge of UNDP and GEF monitoring and evaluation policy demonstrated by having undertaken the evaluation of at least one other UNDP-GEF project in the past seven years
- Previous working experience in Ukraine which shows familiarity with relevant Ukrainian policy and regulations and standards related to energy efficiency is an advantage.
- Experience of evaluating projects for international development agencies in CIS region is considered to be an advantage.
- Excellent written and spoken English is a must; Working knowledge of written and spoken Ukrainian or Russian will be considered as an advantage.

Language

- Fluency in written and spoken English.
- Knowledge of Ukrainian (or Russian) is an asset

Core Competencies:

- Ethics and Values: Demonstrate and safeguard ethics and integrity;
- Organizational Awareness: Demonstrate corporate knowledge and sound judgment;
- Development and Innovation: Take charge of self-development and take initiative;

- Work in teams: Demonstrate ability to work in a multicultural environment and to maintain effective working relations with people of different national and cultural backgrounds;
- Communicating and Information Sharing: Facilitate and encourage open communication and strive for effective communication;
- Conflict Management: Surface conflicts and address them proactively acknowledging different feelings and views and directing energy towards a mutually acceptable solution;
- Continuous Learning and Knowledge Sharing: Encourage learning and sharing of knowledge.

10. 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 <u>UNEG "Ethical</u> <u>Guidelines for Evaluations</u>". The evaluator must safeguard the rights and confidentiality of information providers, interviewees and stakeholders through measures to ensure compliance with legal and other relevant codes governing collection of data and reporting on data. The evaluator must also ensure security of collected information before and after the evaluation and protocols to ensure anonymity and confidentiality of sources of information where that is expected. The information knowledge and data gathered in the evaluation process must also be solely used for the evaluation and not for other uses without the express authorization of UNDP and partners.

11. PAYMENT MODALITIES AND SPECIFICATIONS

%	Milestone
10%	Following submission of a detailed workplan/inception report
50%	Upon conduction of the field visit to Ukraine
40%	Upon finalization of the TE report and acceptance of the report by UNDP and submission of related invoice

12. EVALUATION OF APPLICANTS

Individual consultants will be evaluated based on a cumulative analysis taking into consideration the combination of the applicants' qualifications and financial proposal.

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 (P11 desk reviews and interviews) and financial criteria specific to the solicitation. Only the highest ranked candidates who would be found qualified (received minimum 70% of maximum available technical scores) for the job will be considered for the Financial Evaluation".)

Technical Criteria - 70% of total evaluation - max. 70 points:

§ Educational background (Advanced University degree, Masters or preferably a PhD, Engineering, Energy, Environment, Economics, Law, Business Administration or related field) – 10 points maximum:

(PhD related to Energy/Environment = 10 points, PhD related to other relevant topic = 8 points, Masters related to Energy/Environment = 7 points, Masters related to other relevant topic = 6 points, combined (2 or more) Masters related to relevant topics = 8).

§ Extensive (at least 10-year) work experience and proven track record with policy advice and/or project development/implementation related to energy efficiency preferably in municipal (buildings) sector – 20 points maximum: 10-14 years = 14 points; 15-20 years = 16 points; more than 20 years = 18 points, experience with ESCO = +2 points).

- § Practical experience (within last seven years) in mid-term or final performance evaluation of at least five international and/or regional projects funded by multilateral agencies (including GEF, UNDP) or other international agencies 17 points maximum: (5 evaluations = 12 points; 5-10 evaluations = 13 points; more than 10 evaluations = 14 points; evaluations in CIS country +1 point, experience in Ukraine + 2 points).
- § Prior experience in designing projects and initiatives in the field of energy efficiency 10 points maximum: (1-3 projects designed 6 points, 3-5 projects designed 8 points, over 3 projects designed 10 points).
- § Experience or knowledge of UNDP and GEF monitoring and evaluation policy demonstrated by performance evaluation of at least one other UNDP-GEF project in the past seven years – 7 points maximum: (1-3 evaluations = 5 points, over 3 evaluations = 7 points)
- § Language skills 6 points maximum: (superior writing and oral skills in English = 3 points; knowledge of Ukrainian and/or Russian at the working level = +3 points).

Financial Criteria - 30% of total evaluation – maximum 30 points will be assigned to the financial proposal with the lowest price. All other proposals will be evaluated and assigned points, as per below formula: 30 points [max points available for financial proposal] x [lowest of all evaluated offered prices among responsive offers] / [evaluated price].

The proposal obtaining the overall cumulatively highest score after adding the score of the technical proposal and the financial proposal will be considered as the most compliant offer and will be awarded a contract.

13. APPLICATION PROCEDURES

Qualified candidates will be selected from the evaluation roster within the <u>GPN/ExpRes consolidated roster platform</u> :

- Cover letter explaining why you are the most suitable candidate for the advertised position and a brief methodology on how you will approach and conduct the work (if applicable). Please paste the letter into the "Resume and Motivation" section of the electronic application.
- Filled P11 form / CV including past experience in similar projects and contact details of referees

(blank form can be downloaded from

http://europeandcis.undp.org/files/hrforms/P11 modified for SCs and ICs.doc)

 Financial Proposal that indicates the all-inclusive fixed total contract price and supported by a breakdown of costs, as per Annex I template attached to the Letter of Confirmation of Interest template (can be downloaded from <u>http://procurement-</u>

notices.undp.org/view_file.cfm?doc_id=13028). Please note that all travel related costs (such as flight ticket, per diem, etc.) will be reimbursed separately as per UNDP rules.

Incomplete applications will not be considered. Please make sure you have provided all requested materials

Payments will be made only upon confirmation of UNDP on delivering on the contract obligations in a satisfactory manner.

- [1] http://web.undp.org/evaluation/guideline/documents/PDF/UNDP_Evaluation_Guidelines.pdf
- [2] http://web.undp.org/evaluation/documents/guidance/GEF/UNDP-GEF-TE-Guide.pdf
- [3] Access at: http://web.undp.org/evaluation/guideline/section-6.shtml

Annex B: TE Mission Itinerary

09.09.2024	Time	Group	Interviewee	Position	
	15:00-16:00	UNDP CO & Portfolio Leads	Mr. Christophoros POLITIS	UNDP Country Office Deputy Resident	
				Representative	
			Mr. Roman Shakhmatenko	UNDP Country Office Programme Officer	
			Mr. Ievgen Spivakovskyi	Programme Analyst	
	16:30-17:30	National partners/Ministry for Communities, Territories and Infrastructure Development of Ukraine	Mr. Dmytro Petrunin	HeadoftheEnergyEfficiencyDirectorate,MinistryofCommunities,TerritoriesandInfrastructureDevelopment of Ukraine	
10.09.2024	Time	Group	Credentials	Position	
	16:00-16:50	RTA	Ms. Jana Koperniech	UNDP BPPS Technical Advisor	
			Ms. Tugba Varol	UNDP BPPS Programme Associate	
	17:00-17:50	ITA	Mr. Goran Cacic	International CTA on EMIS	
11.09.2024	Time	Group	Credentials	Position	
	14:00-15:50	Project staff	Ms. Anna Zhovtenko	Project Manager/Coordinator	
		Project staff	Mr. Andrii Zhelieznyi	Energy Efficiency Policy Analyst	
		Project staff	Mr. Sergii Novosolov	Project Analyst -Energy Efficiency Investment	
		Project staff	Mr. Roman Palahusynets	ESCO Engineering Analyst	
		Project staff	Mr. Dmitriy Kramarenko	Energy Management and Monitoring Analyst	
		Project staff	Ms. Liubov Zelenkova	ME and Communication Officer	
		Project staff	Ms. Yevheniia Zelenenko	Project Associate	

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		Project staff	Mr. Ievgen Spivakovskyi	Program Analyst (ex-Operational Associate during 2016-2023)	
	17:00-17:45	Associations/ Association "Energy Efficient Cities of Ukraine" (EECU)	Mr. Svyatoslav Pavlyuk	Executive Director	
	18:00-19:15	Associations/ Ukrainian ESCO Association/PSP Market development expert	Mr. Oleksii Korchmit	Head of the Ukrainian ESCO Association	
12.09.2024	Time	Group	Credentials	Position	
	14:00-14:50	National partner/ State Agency on Energy Efficiency and Energy Saving of Ukraine	Ms. Mariia Malaia	FirstDeputyHead of State Agency on EnergyEfficiency and Energy Saving ofUkraine (SAEE)	
	15:00-15:50	National partner/ Business Development Fund	Mr. Andrii Hapon	Chairperson of the Business Development Fund Board	
	16:00-16:25	PSP	Radiychuk Oleg	Feasibility study expert	
	16:30-16:55	PSP	Radiychuk Liubava	Feasibility study expert	
	17:00-17:25	PSP	Bochulia Petro	Energy audit expert	
	18:00-18:25	PSP	Krulikovska Iaroslava	Expert on banking products for ESCO	
	18:30-18:55	PSP	Tamara Burenko	Energy sector Legal expert	
13.09.2024	Time	Group	Credentials	Position	
	14:00-14:50	Regional partners/Kryvyi Rih City council	Mr. Boris Rybka	Head of the Energy Management Department of the City Council	
	15:00-15:50	Regional partners/Slavutych City council	Ms. Iryna Plavynska	City council energy manager	
	16:00-16:50	ITA	Ivan Filiutsich	International CTA on ESCO	

17:00-17:50	Regional partners/ Korosten City council	Mr. Volodymyr Vyhivskyi	First deputy mayor
18:00-18:50	Regional partners/Pervomayskyi City council	Mr. Anton Orekhov	Deputy mayor
19:00-19:50	National partner/Ministry for Communities, Territories and Infrastructure Development of Ukraine	Mr. Vasyl Shkurakov	FirstDeputyMinisterforCommunitiesTerritoriesandInfrastructureDevelopment of UkraineInfrastructure

Annex C: List of Persons Interviewed

This is a listing of stakeholders contacted in Ukraine (unless otherwise noted) during the Terminal Evaluation period only. Stakeholders were chosen on the basis of their specific role and knowledge of the Project's activities. This included the gender perspective of the EEPB project, where 12 out of the 33 interviewees were female. The Evaluation Team regrets any omissions to this list.

#	Name	Designation	Agency/ Organization	Virtual
1.	Ms Anna Zhovtenko	EEPB Project Manager	UNDP	Online/ Teams
2.	Ms Natalia Kozenko	Programme Associate	UNDP	Online/ Teams
3.	Ms Jana Koperniech	UNDP Energy, Transport & Infrastructure/ Regional Advisor	UNDP	Online/ Teams
4.	Ms Tugba Varol	Regional Program Associate	UNDP	Online/ Teams
5.	Mr Roman Palahusynets	ESCO Engineering Analyst	UNDP	Online/ Teams
6.	Mr Sergii Novosolov	Project Analyst	UNDP	Online/ Teams
7.	Mr Andrii Zheliezny	Energy Efficiency Policy Analyst	UNDP	Online/ Teams
8.	Mr levgen Spivakovskyi	Programme Analyst for UNDP's Energy and Environment Portfolio	UNDP	Online/ Teams
9.	Mr Dmitriy Kramarenko	Energy Management and Energy Monitoring Analyst	UNDP	Online/ Teams
1	Ms Liubov Zelenkova	M&E Communications Officer	UNDP	Online/ Teams
1	Ms Yevheniia Zelenenko	Project Associate	UNDP	Online/ Teams
1	Mr Roman Shakhmatenko	Energy and Environment portfolio team leader at United Nations Development Programme - UNDP	UNDP	Online/ Teams
1	Mr Christophoros Politis	Deputy Resident Representative of the United Nations Development Programme (UNDP) in Ukraine	UNDP	Online/ Teams
1	Mr Dmytro Petrunin	Head of the Energy Efficiency Directorate	Ministry for Communities, Territories and Infrastructure Development	Online/ Teams

1	Mr Goran Cacic	International Expert	IC	Online/ Teams
1	Mr Oleg Radiychuk	Solar Energy Expert	IC	Online/ Teams
1	Mr Svyatoslav Pavlyuk	Executive director	Associations/ Association "Energy Efficient Cities of Ukraine" (EECU)	Online/ Teams
1	Mr Oleksii Korchmit	Head of the Ukrainian ESCO Association	Associations/ Ukrainian ESCO Association/PSP Market development expert/Private companies	Online/ Teams
1	Ms Mariia Malaia	First Deputy Head of State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEE)	National partner/ State Agency on Energy Efficiency and Energy Saving of Ukraine	Online/ Teams
2	Mr Andrii Hapon	Chairperson of the Business Development Fund Board	National partner/ Business Development Fund	Online/ Teams
2	Ms Liubava Radiychuk	Feasibility study expert	PSP	Online/ Teams
2	Mr Petro Bochulia	Energy audit expert	PSP	Online/ Teams
2	Ms laroslava Krulikovska	Expert on banking products for ESCO	PSP	Online/ Teams
2	Ms Tamara Burenko	Energy sector Legal expert	PSP	Online/ Teams
2	Mr Boris Rybka	Head of the Energy Management Department of the City Council	Regional partners/Kryvyi Rih City council	Online/ Zoom
2	Ms Iryna Plavynska	City council energy manager	Regional partners/Slavutych City council	Online/ Zoom
2	Mr Viktor Shevcenko	Deputy of the Mayor	Regional partners/Slavutych City council	Online/ Zoom
2	Mr Yuri Fomichev	Mayor of the City	Regional partners/Slavutych City council	Online/ Zoom
2	Mr Ivan Filiutsich	СТА	Chief Technical Advisor	Online/ Teams
3	Mr Volodymyr Vyhivskyi	Deputy of the Mayor	Regional partners/ Korosten City council	Online/ Zoom
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3	Ms Anna Serheieva	The City Energy Manager	Regional partners/ Korosten City council	Online/ Zoom
3	Mr Anton Orekhov	Deputy of the Mayor	Regional partners/Pervomayskiy City council	Online/ Zoom
3	Ms Aljina Oriekhov	The City Energy Manager	Regional partners/Pervomayskiy City council	Online/ Zoom

Annex D: List of Documents Reviewed

Priority Final RF Matrix for Report Effectiveness Section:

1. The final GEF project results -indicator framework and justification for results by the project team.

Priority Documents:

- 2. Project Inception workshop final report
- 3. Original Project Document (ProDoc) and Annexes.
- 4. Mid-Term Evaluation (MTE)
- 5. GEF Project MTR 'final' inception report (if available)
- 6. GEF Annual Project Reviews (APRs) and Project Implementation Reports (PIRs)
- 7. GEF Mid-Term Evaluation Report
- 8. Evaluation ToR
- 9. Environmental safeguards document

Priority Lists and Reports:

- 10. All PIRs (6), all quarterly reports and the final reports i.e. last PIR (2024)
- 11. List of current national priorities (relevant policies, laws, frameworks) that the project supported and has changed
- 12. Ensure comprehensive documentation of the GEF Project Steering Committee (Project Board Meeting Minutes) is provided. Include an overview and summary of major decisions and project-related adaptations agreed upon by partners during implementation.
- 13. Matrix for final report -List of laws, secondary legislative and policies influenced by the project with institutional results summary in narrative
- 14. Matrix for final report All GEF project supported Technical and Research Reports (with dates and costs)
- 15. Matrix for final report All GEF project supported Outreach and Communications (project brochures, public awareness materials)
- 16. Final GEF tracking tools (FINAL METTs post MTR Capacity Development Scorecard and Financial Scorecard)- to be completed by the PMU before you come to country
- 17. Matrix for final report List of all GEF project -supported capacity building and learning activities (matrix with venues, dates, participant gender, results, etc.)
- 18. Matrix for final report and for analysis List of synergistic ongoing and in the pipeline GEF and or development projects related to same themes, with short explanations
- 19. Matrix or List of project-supported research, scientific, and policy-related studies (enabling activities)
- 20. List of actual stakeholder roles and involvement -outlining the role and actual involvement of stakeholders, including project implementing partners and other stakeholders
- 21. List of names of all project supported staff and consultants attached to the project from inception, including positions and reasons for leaving

- 22. Table of and narrative explaining gender-related disaggregated results ie involved in activities or trainings
- 23. Co-financing table (2024)–For final report. making up the total expected and all donors contributing to the broader initiative, prepared in the format from the GEF guidelines.

Annex E: Evaluation Question Matrix

Evaluation Criteria Questions	Indicators	Sources	Methodology			
Relevance: How does the project relate to the main objectives of the GEF Focal area, and the environment and development priorities at the local, regional and national level?						

 Is the Project and its components addressing the structural challenges in the water sector? -Are there any new activities that are needed and vital for the Project's success? -What should the Project do differently? 	The extent to which project design and efforts are aligned and or integrated with the national and local development plans. The extent to which project design and efforts are aligned and or integrated with the GEF and the UNDP strategic plans. Extent to which project design and efforts aligned with GEF and UNFCCC Paris objectives. The extent to which the project design and efforts align with local, regional, and national environment and development priorities Extent to which project design was targeted (ie, gender responsiveness, LNOB)	 Project Formulation and Design documents Project Inception Report National policies and strategies PB meeting minutes MTR PIRs Project document Stakeholders PMU Project designers Partners (public and private sector) Beneficiaries CSOs/advocacy groups/ community leaders Experts in the field 	Desk review Interviews
Effectiveness: To what extent h	nave the expected outcomes and objectives of the pro	pject been achieved?	
-Is the project meeting its main targets set in the Project Result Framework? Critical gaps, unintended results?	Achievement of Stated Targets and Indicators Percentage of project-specific targets successfully achieved. Adherence to established indicators, measured against baseline and target values.	Documents Project Formulation and Design documents 	Desk review Interviews Virtual site visits Virtual meetings

-Are there unique Project approaches and innovative solutions? -Is the Project meaningfully focusing on gender equality? -Is the Project truly ensuring no one is left behind? -Which are intended and unintended partnerships and networks nurtured by the Project? -What were the main challenges along the way? How were they addressed? -What worked and what did not, and why?	Promotion of Innovative Financing Partnerships Number and nature of new partnerships formed for innovative financing during the project. Percentage increase in funding source diversification due to innovative financing partnerships. Support for Capacity Building and Institutional, Regulatory Learning Number of training sessions conducted for capacity building. Number of stakeholders participating in project sponsored training sessions and meetings (disaggregated by gender) Level of regulatory and institutional knowledge improvement among project stakeholders. Impact on Policy and Legal Changes Number of policies or laws influenced or changed directly as a result of the project. Degree of alignment between project outcomes and relevant legal or policy modifications. Promotion of Gender Equality Proportion of project resources allocated to gender-specific initiatives. Improvements in gender-related indicators within the project's scope, such as participation rates or access to resources. Monitoring Adequacy Percentage completion of scheduled monitoring activities. Level of stakeholder satisfaction with the project's monitoring and reporting mechanisms. Unintended Results and Partnerships: Identification and documentation of unintended project outcomes and their implications. Number and nature of unplanned partnerships established during the project's duration,	 Project Inception Report National policies and strategies PB meeting minutes MTR PIRs Project document Stakeholders PMU Project designers Partners (public and private sector) beneficiaries CSOs/advocacy groups/ community leaders Experts in the field 	
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	specifically in areas of innovative financing and policy <i>Adaptability to major events</i> Extent to which the project adapted and responded to Covid 19 and or other emerging events like disasters		
Efficiency: Was the project imp	lemented efficiently, in line with international and national	onal norms and standards?	
Have resources (financial, human, technical) been allocated strategically and economically to achieve the Project's results?	 Allocation of Resources According to Project Results Percentage of allocated resources aligned with the achievement of project results. Analysis of resource allocation patterns to determine their correlation with the success of project outcomes. Achievement of Significant Structural Changes Identification and documentation of behavioral, policy, and institutional changes resulting from project intervention. Assessment of the value added by the project to drive significant and sustainable structural changes. Extent of Co-Financing Beyond Expected Results Percentage of co-financing that exceeded initial expectations. Evaluation of the impact of additional co-financing on the overall success of the project. 	 Project Formulation and Design documents Project Inception Report National policies and strategies PB meeting minutes MTR PIRs Project document (including financial statements) Stakeholders PMU Project designers Partners (public and private sector) Beneficiaries 	Desk review Interviews Virtual site visits Virtual meetings Progress and trend analysis of project allocations and expenditures

Sustainability: To what extent a	re there financial, institutional, socio-political, and/or	environmental risks to sustaining l	ong-term project results?			
-Are Project processes, achievements and approaches owned by its partners? -Are there solid pre- conditions to sustain and "root" Project results and capacity after it ends? -Anticipated risks?	Extent to which project outputs are expected to continue Extent to which policy or institutional structures or plans are in place for continuation of project efforts	Documents Project Formulation and Design documents Project Inception Report National policies and strategies PB meeting minutes MTR PIRs Project document Stakeholders PMU Project designers Partners (public and private sector) Beneficiaries CSOs/advocacy groups/ community leaders Experts in the field 	Desk review Interviews Qualitative data analysis methods: (i.e. Triangulation, Validations, Interpretations, Abstractions)			
Impact: Are there indications that the project has contributed to, or enabled progress toward reduced environmental stress and/or improved ecological status?						

-What was the role / added value of UNDP in the implementation so far? -What are signals of positive change that can be attributed to the Project work? -Are there specific aspects that may be considered to ensure the intervention will contribute to system change?	Extent to which UNDP provided essential, unique value to the implementation Extent to which the evidence points toward project contribution to change (positive or negative)	 Stakeholders PMU Project designers Partners (public and private sector) beneficiaries CSOs/advocacy groups/ community leaders Experts in the field 	Interviews Qualitative data analysis methods: (i.e. Triangulation, Validations, Interpretation, Abstractions)
Cross-cutting issues			
Gender equality and women's	empowerment: How did the project contribute to gen	der equality and women's empow	erment?
 To what extent has gender equality and the empowerment of women been mainstreamed in the project design and implementation? Has the project had any positive or negative effects on gender equality? 	Level of achievement of logframe targets for women's participation Extent to which women were meaningfully engaged or involved with the project (design, implementation, etc) Extent to which stakeholders (particularly women) report shifts in women's experiences as a result of the project	Documents Project Formulation and Design documents Project Inception Report National policies and strategies PB meeting minutes MTR PIRs Project document Stakeholders PMU 	Desk review Interviews Qualitative data analysis methods: (i.e. Triangulation, Validations, Interpretations, Abstractions)

	 Project designers Partners (public and private sector) Beneficiaries CSOs/advocacy groups/ community leaders Experts in the field
LNOB: in what ways did the project address and include ma	rginalized and under-served groups?

 In what ways have marginalized or under-served communities been mainstreamed into the project cycle? To what extent have marginalized or under-served communities been specifically targeted or impacted by the project? 	Extent to which the project was designed to specifically address and include marginalized or under-served communities or groups Extent to which marginalized or under-served communities or groups were engaged in the project cycle (design, implementation, participation, sustainability, etc)	 Documents Project Formulation and Design documents Project Inception Report National policies and strategies PB meeting minutes MTR PIRs Project document Stakeholders PMU Project designers Partners (public and private sector) Beneficiaries CSOs/advocacy groups/ community leaders Experts in the field 	Desk review Interviews Qualitative data analysis methods: (i.e. Triangulation, Validations, Interpretations, Abstractions)				
Innovation: In what ways did innovation play a role in the project achieving its results?							

 In what ways did the project create an enabling environment for innovation? In what ways were innovative practices catalyzing change? 	Extent to which innovation was fostered and promoted Extent to which innovation was inhibited or challenging	Documents Project Formulation and Design documents Project Inception Report 	Desk review Interviews Qualitative data analysis methods: (i.e. Triangulation, Validations,
	Extent to which innovative practices contributed to project results	 National policies and strategies PB meeting minutes MTR PIRs Project document Stakeholders PMU Project designers Partners (public and private sector) Beneficiaries CSOs/advocacy groups/ community leaders Experts in the field 	Interpretations, Abstractions)

Annex F: Guiding Questions for Interviews

Specific groups of questions were developed and applied for each interview group. These questions may include, but are not limited to, the following:

PMU and Senior UNDP Officials:

- Are the Project's objectives and implementation strategies consistent with global, regional and country environmental issues and priorities, considering Green Environment Fund and UN/UNDP Strategic Frameworks, EU accession agenda and Agenda 2030?
- To what extent have the intended results been achieved or are they likely to be achieved by the end of the project? What are the main Project accomplishments?
- Are there any positive changes in the system (or area addressed by the project) that can be attributed to the Project work?
- Which are intended and unintended partnerships and networks nurtured by the Project?
- What were the main challenges along the way? How were they addressed?
- What worked well and what not, and why?
- Has the project been implemented efficiently, and cost-effectively, and been able to adapt to any changing conditions?
- What were the project management team changes?
- To what extent are project-level monitoring and evaluation systems, reporting, and project communications supporting the project's implementation?
- What would you say has been the specific value-add by UNDP?
- What results from the project do you think will be continued moving forward? Why?
- If you could go back in time and do this project again, knowing what you know now, what would you do differently?

UNDP regional/HQ, GEF regional/HQ staff involved in the project:

- What has been the contribution of partners and other organizations to the outcomes?
- Are there any positive changes in the system (or area addressed by the project) that can be attributed to the Project work?
- Which are intended and unintended partnerships and networks nurtured by the Project?
- What were the main challenges along the way? How were they addressed?
- What worked well and what not, and why?
- Has the project been implemented efficiently, and cost-effectively?
- What has been the specific value-add by UNDP?

- In what ways was the project able to adapt to any changing conditions thus far on the regional level?
- Has the full scale war, COVID-19 pandemic affected the EEPB project implementation and how? Were alternative approaches considered in the course of implementation on the field? What were other potential risks for the Project's efficient implementation?

Project Board members/the Ministries and the Funds:

- Which regulation was adopted by the Ukraine Government of the Parliament?
- Which policy is adopted/changed?
- Has the co-financing mechanism for interventions, established by the EEPB project and stakeholders, and applied through project activities been effective and adequate for achieving the project results? Was the ESCO model effective?
- Are there any positive changes in the system (or area addressed by the project) that can be attributed to the Project work?
- Which are intended and unintended partnerships and networks nurtured by the Project?
- What were the main challenges along the way? How were they addressed?
- What worked well and what not, and why?
- Is the level of ownership by the main stakeholders sufficient to allow for the EEPB project results to be sustained?
- To what extent are there financial, institutional, socio-economic, and/or environmental risks to sustaining long-term EEPB project results?
- What is the budget of the State Fund subvention program? How much of it is committed to reducing emissions?
- What would you say has been the specific value-add of UNDP?
- What results from the project do you think will be continued moving forward? Why?
- If someone asked your advice about designing a similar project, what would you say would be key to include?

Local governments representatives (Cities) and/Beneficiaries:

- What is the benefit to your local government?
- What specific measures were implemented in the local community?
- How well did the cooperation with the UNDP/GEF Project work?
- Are there any positive changes in the system (or area addressed by the project) that can be attributed to the Project work?
- Which are intended and unintended partnerships and networks nurtured by the Project?
- What were the main challenges along the way? How were they addressed?
- What worked well and what not, and why?

- How did the UNDP project support your activities?
- For public procurements (Tenders) procedures, what was the response from the companies? How have the procurement procedures been managed?
- Is the ESCO model adequate for LGs?
- What are the main problems to be solved and what is your recommendation?
- What results from the project do you think will be continued moving forward? Why?
- Is there some specific need for training?
- Is there any additional need for support from the EEPB project?
- How effective was cooperation with the UNDP Project?
- How effective is EMIS and relation to NEMIS?
- How did the UNDP project support your activities (i.e. feasibility studies, procedures, technical documents, etc.)?

Annex G: Financial Table

	UN (US	IDP SD \$)	Governme munic (US	ent including ipalities SD \$)	Donor (US	Agency 5D \$)	Internatic (US	nal Donor D \$)	Private (US	e Donor iD \$)	Total (USD \$)
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	
Total	900,000	200,000	13,096,559	228,689,115	5,480,000	5,480,000	25,442,000	32,372,302	17,000,000	522,096,730	788,838,147

Table 8: Project Co-financing Table (2017-2024)^[1]

Source of Co-financing	Name of Co-financer	Type of Financing	Investment Mobilized	Amount (in USD)
Municipalities	Municipalities investment in project among 53 ESCO pilots	In-Kind	Investment Mobilized	1,500,000
Government	The State Agency for Energy Efficiency and Energy Saving of Ukraine	In-Kind	Investment Mobilized	227,189,115
International donor	GIZ - Energy Efficiency in Municipalities	Grant	Investment Mobilized	4,424,779
International donor	GIZ - Energy Efficiency in Municipalities II	Grant	Investment Mobilized	4,947,523

International donor	IFC - Ukraine Residential Energy Efficiency Project	Grant	Investment Mobilized	6,500,000
International donor	USAID - Municipal Energy Reform Project	Grant	Investment Mobilized	16,500,000
Private financing	Kominbank	In-Kind	Investment Mobilized	1,540,000
Private financing	NEFCO	In-Kind	Investment Mobilized	800,000
Private financing	European Investment Bank	In-Kind	Investment Mobilized	443,310,000
Private financing	ESCO companies within 642 energy service contracts	In-Kind	Investment Mobilized	76,446,730
UNDP	UNDP	Grant In-Kind Public-investment	Investment Mobilized	200,000
Total financing	783,358,147			

Annex H: TE Rating Scales

Ratings for Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight, Execution, Relevance	Sustainability ratings
 6 = Highly Satisfactory (HS): exceeds expectations and/or no shortcomings 5 = Satisfactory (S): meets expectations and/or no or minor shortcomings 4 = Moderately Satisfactory (MS): more or less `meets expectations and/or some shortcomings 3 = Moderately Unsatisfactory (MU): somewhat below expectations and/or significant shortcomings 2 = Unsatisfactory (U): substantially below expectations and/or major shortcomings 1 = Highly Unsatisfactory (HU): severe shortcomings Unsatis (U/A): available information does not allow an assessment 	 4 = Likely (L): negligible risks to sustainability 3 = Moderately Likely (ML): moderate risks to sustainability 2 = Moderately Unlikely (MU): significant risks to sustainability 1 = Unlikely (U): severe risks to sustainability Unable to Assess (U/A): Unable to assess the expected incidence and magnitude of risks to sustainability

Annex I: UNEG Code of Conduct for Evaluators

Evaluators/Consultants:

Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.

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.

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.

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.

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.

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 limitations, findings and recommendations.

Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

TE Consultant Agreement Form

Agreement to abide by the Code of Conduct for Evaluation in the UN System:

Name of Consultant: Jude Kallick Name of Consultant: Mitar Perusic

I confirm that I have received and understood and will abide by the Code of Conduct for Evaluation.

Signature	judith Kalliek	Signature:	Mepyer (t)
0		0	
Date	30 September 2024	Date30 Sep	tember 2024

Annex J: TE Report Clearance Form

Terminal Evaluation Report UNDP/GEF project on "Removing Barriers to increase investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities" (PIMS #4114) Reviewed and Cleared By:						
Commissioning Unit (M&E Fo	ocal Point)					
Name: Natalia Kozen	ko					
Signature:	Docusigned by: Natalia konzenko Harmance chart					
23-oct-2024 Date:						
Regional Technical Advisor (I	Nature, Climate and Energy)					
Name: Jana Kopernie	ech					
Signature:	Jana topennicu EDSC241FBA2C457.					
23-oct-2024 Date:						

Annex K: Total Number of EEPB Project Stakeholders

Institution	# of offices/ organizations	# of Project Board Members	Location	Years with Project	Type of Activities
Governmental Bodies					
The State Agency for Energy Efficiency and Energy Saving of Ukraine	1	1	12 Muzeinyi lane, Kyiv, Ukraine, 01001	2016-2024	EEPB Action Plan47
The Ministry for Communities, Territories and Infrastructure Development of Ukraine (Ministry of Infrastructure)	1	1	14 Peremohy Avenue, Kyiv, 01135	2016-2024	- Legislation; - NEMIS
Business Development Fund	1	0	Instytutska St, 9 Kyiv, Ukraine, 02000	2023-2024	ESCO-Fund FSM
GEF focal point from the Ministry of Ecology and Natural Resources of Ukraine	1	1	Vasylia Lypkivskoho St, 35, Kyiv, Ukraine, 03035	2016-2024	No specific activities except the Project Board
Non-Governmental Organizations (NGO	s/CSOs)		•	•	•

⁴⁷ Action Plan for the Project "Removing Barriers to increase investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities"

Ukrainian Association of Energy Service Companies	1	0	Prorizna St, 22B, 2 Kyiv, Ukraine, 02000	2022-2024	ESCO pilot projects
Covenant of Mayors East	1	0		2023-2024	Cooperation with municipalities
Association «Energy Efficient Cities of Ukraine»	1	0	12 Lepkoho St., office 6 79007 Lviv, Ukraine	2023-2024	-
Ecoclub	1	0	33014, Rivne, 41 Stepana Bandery St., office 95	2023-2024	 Energy management courses; Webinars on ESCO- Solar power plants
Women's Energy Club of Ukraine	1	0	Kyiv	2022-2024	Promoting job opportunities for women
Local Communities				•	
Fastiv	1	0		2016-2019	 MoU EMIS by the project
Kaniv	1	0		2016-2019	- MoU - Municipal ESCO
Sudova Vyshnia	1	0		2016-2019	- MoU
Chortkiv	1	0		2016-2019	 MoU EMIS by the project
Poltava	1	0		2016-2019	- MoU - School for energy

				managers
Khotyn	1	0	2016-2019	 MoU EMIS by the project
Dobropillia	1	0	2016-2019	 MoU EMIS by the project
Druzhkivka	1	0	2016-2019	 MoU EMIS by the project
Selydove	1	0	2016-2019	 MoU EMIS by the project
Sloviansk	1	0	2016-2019	 MoU EMIS by the project
Mykolaiv	1	0	2016-2019	- MoU - Energy certificate
Obukhiv	1	0	2016-2019	- MoU
Melitopol	1	0	2016-2019	- MoU
Dubno	1	0	2016-2024	 MoU EMIS by the project ESCO projects
Borodyanka	1	0	2016-2019	- MoU - ESCO projects

Savran	1	0	2016-2019	- MoU - ESCO projects
Drohobych	1	0	2022-2024	 MoU ESCO projects energy audits, pre-feasibility studies
Slavutich	1	0	2022-2024	 MoU ESCO projects pre-feasibility studies
Odesa	1	0	2022-2024	- MoU - ESCO projects
Korosten	1	0	2022-2024	 MoU ESCO projects energy audits, pre-feasibility studies
Nizhyn	1	0	2022-2024	 MoU ESCO projects pre-feasibility studies
Yuzhnoukrainsk	1	0	2022-2024	 MoU ESCO projects pre-feasibility studies
Chornomorsk	1	0	2022-2024	 MoU ESCO projects energy audits, pre-feasibility studies

Pryluky	1	0	2022-2024	- MoU - energy audit
Zviahel	1	0		 MoU energy audits, pre-feasibility studies ESCO projects
Bila Tserkva	1	0	2022-2024	 MoU EMIS by the project
Khmelnytsky	1	0	2022-2024	- MoU - ESCO projects
Novovolynsk	1	0	2022-2024	 MoU ESCO projects energy audits, pre-feasibility studies
Cherkasy	1	0	2022-2024	 MoU energy audit, pre-feasibility studies
Kryvyi Rih	1	0	2022-2024	 MoU ESCO projects pre-feasibility studies
Vinnytsia	1	0	2022-2024	 MoU ESCO projects energy audits, pre-feasibility studies

	1	0	2022-2024	-	MoU pre-feasibility
Kamianets Podilsky					studies
Kyiv	1	0	2022-2024	-	MoU energy audits, pre-feasibility studies
Kremenchuk	1	0	2022-2024	-	ESCO projects SECAP, energy audits, pre- feasibility studies
Lviv	1	0	2022-2024		ESCO projects pre-feasibility studies
Pervomaiskii	1	0	2022-2024	-	MoU ESCO projects pre-feasibility studies
Rivne	1	0	2022-2024	-	EMIS by the project
Yagotyn	1	0	2022-2024	-	ESCO projects
Brovary	1	0	2022-2024	-	ESCO projects
Truskavets	1	0	2022-2024	-	ESCO projects
Vyzhhorod	1	0	2022-2024	-	ESCO projects
Ternopil	1	0	2016-2019	-	EMIS by the project

Severodonetsk	1	0		2016-2019	- ESCO projects
Berezhany	1	0		2022-2024	- energy audits
Burshtyn	1	0		2022-2024	- energy audits
International Organizations					
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	1	0	Wielinger Straße 52 82340 Feldafing Deutschland Von-der-Tann-Str. 2a 80539 München	2016-2024	 course for energy managers
TEAD Project (Trainings for Energy Auditors & Technicals Designers in Ukraine)	1	0	Kyiv	2023-2024	 course for energy auditors
REFINE project, financed by EU in line with Horizon 2020	1	0	Kyiv	2023	- FSM
Private and public businesses					
ESCO companies in line with pilot projects					
Financial Institutions					
Cominbank	1	0	04053, Ukraine, Kyiv, Bulvarno- Kudriavska St., (Vorovskyi), 6	2016-2024	MoU, Factoring
Globus Bank	1	0	Kurenivs'kyi Ln, 19/5, Kyiv, Ukraine, 04073	2023-2024	ESCO-Fund

Ukrgazbank	1	0	1 Yerevanska St., Kyiv 03087, Ukraine	2016-2024	FSM
Ukreksimbank	1	0	Antonovycha St, 127, Kyiv, Ukraine, 03150	2023-2024	FSM

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Annex L:	1E	Logical	Framework	Status	Update

Strategy	Objectively Ve	erifiable I	ndicator	S		Evidence	Achievement	Sources of Verification
	Description	Base - line	Mid- Term	End of Project	Current value as of Sept 2024		rating and justification	
Objective: Enabling of the transformati on of market for investments	Cumulative GHG emission reductions (in tCO2 over 20-yr timeline) from the public buildings sector of the country.	0		8,893	16,052.48	Energy and Savings Analysis. ⁴⁸	Highly satisfactory	 Regular periodic operations reports from each EPC pilot, each FSM pilot,
in EE in public buildings in the country.	Cumulative volume of investment in energy efficiency in public buildings (US\$ million)	0		21	22.92	 Breakdown: \$4 mln investment from 24 new pilots in July - September 2024 \$12.5 mln investment in energy efficiency from 39 EPCs pilots in June 2023 - June 2024. \$3.7 mln investment under 53 EPCs pilots before suspension \$1.54 mln USD (UAH 41.6 million) volume of credit by the bank and \$1.18 mln USD (32 million UAH) invested by ESCOs between 2019, 2020 and 2021 within the ESCO Factoring mechanism, designed by this project. Planned before the end of project: around \$2-3 mln of direct investments through new FSM (with SAEE and Business development fund). 	Highly satisfactory	each EPC replication project, each public buildings EE projects in partner cities and municipalities EMIS report of each public building in partner cities. Regular periodic reports on the Measuremen t of each

⁴⁸ Object_by_Object_analisys_of_ESCO_pilots ENERGy AND SAVING, provided by Project Team.

	Cumulative energy saved from installed energy efficiency systems in public buildings (MWhe/MWhth).	0		2,346	24,164.16	CO2 calculations (each individual object has its own table with calculations). Then the calculations are summed in this table ⁴⁹	Highly satisfactory	indicator in the log frame.
	Cumulative number of green jobs created in the public buildings sector of the country.	0		3,000	4,562	Output 3.4. Capacity development of energy managers + EMIS data.	Highly satisfactory	
Outcome 1: Consistent effective enforcement of a streamlined and comprehensi ve policy, legal and regulatory frameworks to promote	Percentage increase in the number of EE&EM projects in public buildings that are facilitated by the approved and effectively enforced policies and laws/regulations that promote and support EE&EM and EE technology and measures applications.	19	190	500	644%	The Project hired an expert to develop a methodology and calculate impact for this indicator.	Highly satisfactory	 Government reports on the implementati on of the approved EE policies and regulations. Regular periodic reports on the status of the implementati on of the relevant
and support energy efficiency in public buildings.	No. of cities/municipalities that develop and implement approved SEAPs	0	10	50	29	76 SECAPs + pre-feasibility studies conducted in 26 cities SECAP: Kaniv, Nizhyn, Koziatyn, Kremenchuk, Kryvyi Rih, Berezhany Water Supply System Recovery Plan: Trostianets Pre-feasibility studies for heat, water or solar power plants: Khmelnytsky, Vinnytsia, Drohobych, Chortkiv, Bila Tserkva, Zviahel, Kamianets Podilskyi, Kyiv, Korosten, Kostiantinivka, Lviv, Myrhorod, Chernihiv, Nizhyn, Novovolynsk, Odesa, Pervomaiskyi, Slavutych, Chornomorsk, Cherkasy, Yuzhnoukrainsk, Kharkiv	Highly satisfactory	public buildings EE policies/regul ations)

⁴⁹ Object_by_Object_analisys_of_ESCO_pilots ENERGy AND SAVING, provided by Project Team.

						Output 1.2. SEAPs+EU Covenant of Mayors data.		
	No. of cities/municipalities that officially adopt and implement energy management plans	0	10	20	250	PIR 2024	Highly satisfactory	
Output1.1:SignedMoUswithsmallandmediumsized cities inUkrainetoworkonESCOand	No. of partner cities/municipalities that implement EE and energy management projects together with ESCOs as per the agreement in the signed MoUs.	0	10	20	19	Dubno, Borodyanka, Savran, Drohobych, Slavutich, Odesa, Korosten, Nizhyn, Yuzhnoukrainsk, Chornomorsk, Kaniv, Obukhiv, Zviahel, Khmelnytsky, Novovolynsk, Kryvyi Rih, Vinnytsia, Lviv, Pervomaiskii Output 1.1. MoUs with cities and City surveys data.		 Signed MoUs. Relevant documentatio ns of the individual EE and EM projects by the partner
energy management	No. partner cities/municipalities that implement EE and energy management projects on their own as per the agreement in the signed MoUs.	0	10	20	21	EMIS by the project (Fastiv, Chortkiv, Khotyn, Dobropillia, Druzhkivka, Selydove, Sloviansk, Dubno, Bila Tserkva, Rivne); NEFCO project (Kaniv); Energy managers school (Poltava); Other measures - replies in surveys - link below (Drohobych, Slavutich, Odesa, Yuzhnoukrainsk, Zviahel, Novovolynsk, Cherkasy, Kryvyi Rih, Vinnytsia) Output 1.1. MoUs with cities and City surveys data.		 cities and municipalities Reports on the implementati on of the activities for delivering Output 1.1.

Output1.2:PreparedSustainableEnergySustainableAction PlansSustainable(SEAPs) andSustainableSignedEUCovenantOfMayors(asrequired).In	No. of partner cities/municipalities that implement their SEAPs and realized energy and energy cost savings from the planned EE and energy management initiatives.	0		5	5	Realized pre-feasibility studies, concluded ESCO-contracts, already receive savings: Drohobych, Korosten, Pervomaiskyi, Chornomorsk, Kryvyi Rih	 Prepared improved SEAPs and signed EU CMs. Reports on the implementati on of the
	No. partner cities/municipalities that invested on the implementation of planned EE and energy management initiatives in their SEAPs.	0	1	10	11	Realized pre-feasibility studies, concluded ESCO-contract (installation phase): Khmelnytskyi, Zviahel, Lviv, Yuzhnoukrainsk, Nizhyn, Kyiv (SCMU) Realized pre-feasibility studies, concluded ESCO-contracts, already receive savings: Drohobych, Korosten, Pervomaiskyi, Chornomorsk, Kryvyi Rih	activities for delivering Output 1.2.
Output 1.3: Developed and approved secondary legislation to support new law including	No. of cities and municipalities adopting the approved and enforced secondary regulations to support ESCO market development	0	1	10	23	cities that follow approved and enforced secondary legislation regarding the simplified ESCO procedure that the Project developed, approved in June 2023, according to the tender system Prozorro.	 Documents on the formulated amended, and draft secondary, legislations.

financial incentives provided to ESCOs to invest in Energy Efficiency in public buildings.	No. partner cities/municipalities that implemented EE and EM initiatives with the assistance of ESCOs.	0		10	22	 Borodyanka Savran Pervomaiskii Dubno Severodonetsk Drohobych Slavutich Odesa Korosten Nizhyn Yuzhnoukrainsk Chornomorsk Novovolynsk Kryvyi Rih Vinnytsia Lviv Yagotyn Brovary Truskavets 20. 21. 	Vyzhhorod Khmelnytskyi	Reports on the implementati on of the activities for delivering Output 1.3.
Output 1.4: An established proven model for EPC trading for enhanced ESCO liquidity and additional investment.	No. of banks/FIs that provide financing to ESCOs using EPC contracts as part of the collateral.	0	1	3	0			 Documents on the implemented ESCO led EPC pilots. Reports on the implementati on of the activities for delivering Output 1.4.

Output 1.5: Developed and approved regulations to support the adoption of national and city wide energy	No. of cities and municipalities adopting the approved and enforced secondary regulations for energy management in public buildings in cities and municipalities.	0	1	10	277	The number is already calculated, but the final report will be available by 20 September. This is the number of cities that approved energy management plans and have appointed energy managers		 Documents on the formulated and approved legislations on national and local energy management in public
management for public buildings.	No. partner cities/municipalities that implement medium to high EE investments in their public buildings.	0	1	10	12	3 Enhanced ESCO projects in Kryvyi Rin in 2024 9 cities through Enhanced ESCO - from previous years: Drogobych, Savran, Korosten, Pervomaiskii, Severodonetsk, Nezhin, Borodyanka, Slavutich, Odesa Kaniv through NEFCO and UNDP Ternopil through EIB		 buildings. Reports on the implementati on of the activities for delivering Output 1.5.
Outcome 2: Increased availability of, and access to, financing for EE and	No. of operational FSMs with local banks and financial institutions for EE projects in public buildings.	0	1	3	3	Factoring; ESCO-Fund with the Business development fund; Decarbonization Fund of Ukraine with the SAEE	Satisfactory	 FSM documents with banks and financial institutions Annual
EM initiatives in public buildings in cities and municipalitie s.	No. of EE projects in public buildings financed either through the FSM; or by private sector and ESCO investment.	0	2	10	308	192 - Factoring by Cominbank 53 - old pilots 63 - new pilots	Highly satisfactory	 Reports on the planned and implemented EE projects of public buildings Project monitoring and activity reports.
Output 2.1: Established and capitalized Financial	No. of banks/Financial Institutions that adopt and implement FSM.	0	1	2	2	Cominbank (factoring) and Globus bank (ESCO-Fund)		 Documents on the FSMs found in the banks/Fls

Support Mechanism (FSM) to support private/ ESCO	No. of ESCO-led EE projects in public buildings that are financially supported by FSM Volume of private	0	5	10 USD 5	192 76 million	project supported by factoring (received credits from Cominbank) EEPB_31.08.2021_Letter_ComInBank ESCO loans 2019 2021 data. invested by ESCO in EE Projects within 641	that implement such a scheme. Reports on the
investment in energy efficiency projects in public buildings.	investments (including ESCO) in EE projects in public buildings.			million	USD	contracts (2.15 billion UAH adjusted to USD according to exchange rate changes yearly) SAEE_Letter regarding Co Financing and results 15.08.2024 data.	implementati on of the activities for delivering Output 2.1.
Output 2.2: Model Municipal EPC Procurement	No. of cities that launched public tenders for ESCO- led EPC EE projects in public buildings.	0	10	20	138	cities that launched public tenders for ESCO in system Prozorro	 Model municipal EPC procurement package.
package for launching EPC tenders.	No. of approved tenders of ESCO-led EPC EE projects in public buildings.	19	190	380	642	ESCO contracts concluded according to SAEE_Letter regarding Cofinancing and results 15.08.2024	 Documents on the approved EPC tenders. Reports on the implementati on of the activities for delivering Output 2.2.
Output 2.3: Signed MOUs with banks operating in small and medium	No. of banks that agree to adopt and implement the FSM developed by the project as per the agreement in the signed MoUs.	0	1	2	1	Cominbank MoU signed; Ukrgazbank MoU in the process; Plus there will be also a letter of intent from Ukreximbank	 Interviews with banks implementing the FSM Documents on the approved
sized cities in Ukraine to implement the financial	No. of approved loans for EE projects in public buildings from banks using the FSM.	0	1	5	192	Loans from Cominbank EEPB_31.08.2021_Letter_ComInBank ESCO loans 2019 2021 data set.	loans issued through the FSM.

support mechanism.	Cumulative amount of approved loans from banks using the FSM, US\$.	0	1	USD5 million	1.54	Loans from Cominbank with Factoring FSM	 Reports on the implementati on of the activities for delivering Output 2.3. 	
Output 2.4: Developed standardized banking products for financially supporting ESCO-led	No. of banks that support ESCO lending and financing following the standardized banking products they were trained to use.	0		1	1	Cominbank Globus in going to provide loans soon under ESCO-fund with BDF	 Interviews with banks that support ESCO lending Documents on the approved 	
EPC EE projects.	No. of approved commercial loan(s) for ESCO-led EE projects using the EPC contract as the security for the loan by the borrower	0	1	2	0	Based on the discussions and negotiations with the banks, they are not going to use EPC contract as the security	 approved loans issued by the banks that support ESCO lending and financing. Reports on the implementati on of the activities for delivering Output 2.4 	
Output 2.5: Trained and technically supported ESCOs, including an established	No. of certified ESCOs that design, engineer, supply and implement EE projects in public buildings using the EPC modality.	0	5	10	15	ESCOs that implement EPC according to Prozorro	 ESCO training reports ESCO training 	
Help Desk, to enable them to implement energy efficiency measures in public buildings using the EPC modality.	No. of ESCO-led EPC EE projects that were successfully implemented and technically assisted by the established Help Desk.	0	1	10	0	ESCO Help desk was operational before the project was suspended. Now it will work again under the Decarbonization Fund initiative		 course materials Report on the establishmen t of the Help Desk. Logbook of the services provided by the Help Desk. Reports on the implementati on of the activities for delivering Output 2.5.
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Outcome 3: Increased adoption and implementati on of EE technologies , techniques, and practices in	No. of replication ESCO-led EPC EE projects in public buildings planned and implemented by cities and municipalities in other regions of the country.	0		20	304	These EPCs used the templates developed by the Project, which is why they are considered replications. The project developed a methodology to calculate replications in 2024. According to it, the breakdown by year is the following: 2019 – 151, 2020 – 65, 2021 – 28, 2022 – 48, 2024 – 12.	Highly satisfactory	 Project activity reports (including those from project partners) on the delivery of Component 3
public buildings; and enhanced confidence in the viability of EE projects in public buildings.	No. of EE projects in public buildings designed and financed by the private sector (apart from ESCOs) for implementation as influenced by the results and outcomes of the pilots implemented under the project.	0		10	39	During 2017-2019 managed to support Ternopil city in attracting EUR 30.5 million loan from EIB to completely renovate the educational public buildings in the city (39 objects).	Highly satisfactory	• Documents on each ESCO-led EPC EE pilots that were planned and implemented in public buildings

Output 3.1: Prepared, published and disseminate d ESCO Market Help Guide.	No. of ESCOs using and benefitting from the ESCO Market Help Guide. No. of ESCO-led EE projects in public buildings that were aided by the ESCO Market Help Guide	0		5		The project is now developing a survey for ESCO companies to gather information on the indicator The project is now developing a survey for ESCO companies to gather information on the indicator	 Interviews of ESCOs that made use of the ESCO Market Help Guide. Reports on the implementati on of the activities for delivering Output 3.1
Output 3.2: Completed energy audits of schools, kindergarten s, hospitals, and administrativ e government	No. of EE projects in public buildings that are designed and implemented based on the results and recommendations of the energy audits.	0	10	20	33	Zviahel (Gymnasium №9) - 1; Chornomorsk (Hospital and lyceum №7) - 2; Novovolynsk (Maternity department of the Central City Hospital) - 1; EIB Ioan in Ternopil; NEFCO Ioan in Kaniv; renewable energy investments in Nizhyn; school refurbished by Municipal ESCO in Mykolaiv; 25 ESCO projects	 Completed energy audit Reports Documentati on of each EE project that were designed based on the completed energy
buildings.	No. of ESCO-led EPC pilots that were designed and implemented based on the results and recommendations of the energy audits.	0	5	10	25	Among the 53 pilots before suspension	 Reports on the implementati on of the activities for delivering Output 3.2.
Output 3.3: Completed ESCO-led EPC EE pilot projects in schools, kindergarten s, hospitals, and	No. of additional implemented ESCO- led EPC EE projects in public buildings (apart from planned EPC pilots) that were designed based on the results of the EPC pilots	0		10	304	replications (see justification above in Outcome 3)	 Documentati ons of each additional implemented EE projects (with and without ESCO)

administrativ e government buildings.	No. of implemented EE projects by public buildings (without ESCO) that were designed based on the results of the EPC pilots	0	10	16	According the surveys of the cities: According to survey for cities: Novovolynsk - 1 project Cherkasy - 5 project Yuzhnoukrainsk - 1 project Pervomaiskyi - 9 projects City surveys data set.	 Reports on the implementati on of the activities for delivering Output 3.3.
Output 3.4: Completed training of designated "Energy Managers" in monitoring energy use in public buildings	No. of new qualified energy managers that are fully employed by cities and municipalities.	0	40	4498	 1,003 trained in 2018-2019. 1,619 trained in Odesa city, Rivne, and Kirovohrad regions in June – September 2022 by local EMIS provider (56% men and 46% women) 1,055 trained in 2022 through a series of 10 webinars (54% are men and 46% women) 821 trained in December 2023 (46% are men and 54% women) 	 Training manual and the training reports A survey (or a roster) of certified energy managers.
through an EMIS, and in designing and	No. of cities employing fully qualified energy managers	0	20	126	Cities where energy managers are employed who were trained by local EMIS providers in Rivne, Kirovohrad Oblasts, and Odessa ⁵⁰	the implementati on of the
implementin g energy efficiency measures.	No. of trained energy managers that are designing and operating EMIS in other types of buildings (commercial and industrial).	0	40	95	energy managers who joined the trainings by local EMIS as free listeners (not managers in cities) ⁵¹	delivering Output 3.4.
Output 3.5: Completed conduct of organized walk-through days for senior public officials to	No. of new cities/municipalities that become interested and planned to invest in ESCO-led EPC EE projects in public buildings.	0	20		Will conduct a survey after all study-tours	 Report of the proceedings of each "walk- through" day promotion.

⁵⁰ Energy managers trainings certificates, provided by Project Team.

⁵¹ Energy managers trainings certificates, provided by Project Team.

view the operation of the implemented EPC pilots.	No. of private sector entities that become interested and planned to invest in EE projects (with or without ESCO support) in their buildings.	0		20		Will conduct a survey after all study-tours		 Interviews with leaders of participating cities and municipalities and private sector entities. Reports on the implementati on of the activities for delivering Output 3.5.
Outcome 4: C Improved c capacity and th capability of ir city/municipa a	Cumulative no. of cities/municipalities that are implementing EMIS and contributing to the NEMIS	0	10	100	0		n/a	 Documents on the installed and operational local EMISs, NEMIS and
governments in energy monitoring and reporting, energy management and energy efficiency in public buildings.	Cumulative no. of building (public and private) EE projects that are designed based on information derived from the NEMIS and NEMIS Database.	0		10	0		n/a	 NEMIS Database. Project activity reports (including those from project partners) on the delivery of Component 4 outputs).

Output 4.1: Fully capable and funded state agency mandated to operate[9] and maintain the NEMIS and NEMIS Database.	No. of public buildings reporting energy supply, demand, consumption data and EM activities information to the NEMIS, and included in the NEMIS Database.	0	10	40	0		 Regular periodic summary reports from the NEMIS Database will provide the evidence. Reports on the
	No. of feedback reports provided by the SAEE to administrators/owne rs of public and private buildings, building practitioners and ESCOs on EM&EE initiatives in buildings based on the NEMIS.	0		40	0		implementati on of the activities for delivering Output 4.1
Output 4.2: Completed capacity development program for energy auditors.	No. of trained energy auditors that are engaged in the conduct of energy audits to identify and define the EPC pilots and replication EE projects in public buildings.	0		50	64	2024 Trainings for energy auditors ⁵²	 Reports on the completed energy audits of the trained energy auditors. Reports on the the the the the the the the the the
	No. of energy auditors that are engaged by the government (national/local) in the conduct of building energy audits.	0		40	1259	According to SAEE database: https://data.gov.ua/dataset/fc81897c- ede3-4936-b6ec- 0c11e7d90a46/resource/2a8bbc0c-eab4- 4024-8ee1-6f99a5cdd778	implementati on of the activities for delivering Output 4.2.

⁵² EEPB_23.02.2024_LoP_participants, provided by Project Team.

Output 4.3: Developed and published public awareness raising materials and completed nation-wide awareness and information campaign advocating	No. of cities/municipalities that implemented EE projects (with or without ESCO support) in public buildings that were designed based on, or influenced by, the published public awareness materials and conducted information campaigns on EM&EE in public buildings	0	10	20		Developing a survey now for partner cities and email digest subscribers	 Documents Documents on each additional implemented EE projects (with and without ESCO) that were influenced by the published information and promotional materials.
the benefits of energy efficiency measures in public buildings (incl. project website).	No. of local governments, ESCOs, and building practitioners that use the published materials in their EM&EE initiatives in public buildings.	0		50		Developing a survey now for ESCO companies and cities	 Reports on post-evaluations or surveys that will be conducted to determine the impacts and benefits of these materials. Reports on the implementati on of the activities for delivering Output 4.3.
Output 4.4: Established and operational	Cumulative no. of public buildings that are covered by the NEMIS Database	0	100	1,500	0		 Operational NEMIS Database

national database of public buildings re. energy consumption	Cumulative no. of public building EE projects that are designed based on information from the NEMIS Database.	0		50	0		Reports generated by the NEMIS Database Documentati
and an energy monitoring and information management system for public buildings	No. of cities/municipalities that use information from the NEMIS Database in urban/town development planning and in the design of urban/town energy projects.	0		20	0		 on on the installed and operational City-wide Energy Consumption Databases for Public Buildings Special surveys, e.g., performance evaluation of the NEMIS Database. Reports on the implementati on of the activities for delivering Outputs 4.4 and 4.5.
Output 4.5: Established and operational	Cumulative no. of cities/municipalities that have an installed operational EMIS.	0	10	20	136	10 cities before suspension 126 cities in Rivne and Kirovohrad oblasts and Odesa	 Operational city-wide EMIS in the selected
Energy Managemen t Information System	Average percentage of public building that are monitored in a city-wide EMIS, %	0		50	39	According to survey of the cities where EMIS was installed by the project	cities Reports generated by

(EMIS) in selected Ukrainian small and mid-size cities.	Average percentage of energy savings in public buildings that is directly attributable to the operation of a city- wide EMIS, %	0	5	6.5	according to survey of the cities where EMIS was installed by the project and that provided the data	 the city-wide EMIS Special surveys, e.g., performance evaluation of the city-wide EMIS. Reports on the implementati on of the activities for delivering the relabeled Output 4.6.
Output 4.6: Agreed methodology and sustainable institutional	Average no. of system downtimes per year in public building EMIS connected to a city- wide EMIS.	0	5	0		 EMIS monitoring and analysis reports Surveys, e.g., performance
arrangement s for annual monitoring of energy efficiency in public	Average percentage of connected city- wide EMIS per year that are regularly reporting to the NEMIS.	0	20	0		 performance evaluation of the city-wide EMIS. Reports on the implementation
buildings through adoption and implementati on of an Energy Managemen t and Information						on of the activities for delivering the relabeled Output 4.6.
System (EMIS).						

Output4.7:CompletediInternationalaConferenceoonenergyefficiencyinpublicobuildingsinUkraine.i	No. of expressed interests/plans among the conference participants to replicate specific outputs (e.g., EMIS/NEMIS) of the EEPB project in their respective cities/municipalities	0	50	0	Conference to be held in Q4 2024	 Documentati on of the conference proceedings Documentati on of post- conference survey Relevant conference reports.
	No. of potential ESCO business deals that are initiated among ESCO, EE technology suppliers, project financers and building practitioners participating in the conference.	0	20	0	Conference to be held in Q4 2024	Reports on the implementati on of the activities for delivering the relabeled Output 4.7.

Annex M: TE Audit Trail (in separate file)

Annex N: GEF Core indicators / Tracking Tools (in separate file)

Annex O: ESCO Pilots GHG Calculation prepared by the Project Team (in separate file)

Annex P: Action Plan for the Project prepared by the Project Team (in separate file)

Annex Q: Object by Object Analysis of ESCO pilots, Energy and Savings prepared by the Project Team (in separate file), provided by the Project Team.

Annex R: List of energy managers trainings certificates prepared by the Project Team (in separate file)