

# Final Evaluation Report for Ukraine Sustainable Energy Lending Facility

GEF Final Evaluation – Creating Markets for Renewable Power in  
Ukraine

Draft Final Report

Confidential

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## Abbreviation list

CEO	Chief Executive Officer
CMRPU	Creating Markets for Renewable Power in Ukraine
CO <sub>2eq</sub>	Carbon Dioxide equivalent
CRM	Concept Review Memorandum
CTF	Clean Technology Fund
EIA	Environmental Impact Assessment
EBRD	European Bank for Reconstruction and Development
EnPC	Energy Performance Contract
E-RES	Electricity and Renewable Energy Supply
ESG	Environmental, Social and Governance
ESIA	Environmental and Social Impact Assessment
FEV	Final Evaluation
FiT	Feed-in-Tariff
GEF	Global Environment Facility
GHG	Greenhouse gas
GWh	Gigawatt hours
HPP	Hydropower plant
IFC	International Finance Corporation
IFI	International Financial Institution
IPP	Independent Power Producer
M&E	Monitoring and evaluation
Me <sub>ws</sub>	New renewable power generation capacity installed
MTR	Mid-Term Review

MW	Megawatt
MWh	Megawatt hour
NEFCO	Nordic Environment Finance Corporation
NERC	National Electricity Regulatory Commission
PAN	Project Appraisal Note
PIU	Project Implementation Unit
PIF	Project Identification Form
PIR	Project Implementation Report
PPA	Power Purchase Agreement
PPG	Project Preparation Grant
PSR	Project Screening Report
RCE	Request for CEO Endorsement
RES	Renewable Energy Sources
SAEE	State Agency on Energy Efficiency and Energy Saving of Ukraine
SER	Strategic Environmental Review
SHPP	Small hydropower plant
SMART	Specific, Measurable, Achievable, Relevant and Time-bound
ToR	Terms of Reference
UAH	Ukraine Hryvnia (currency)
UKEEP	Ukraine Energy Efficiency Programme
UPSEEF	Ukraine Public Sector Energy Efficiency Framework
UREDLF	Ukraine Renewable Energy Direct Lending Facility
USELF	Ukraine Sustainable Energy Lending Facility
WEM	Wholesale Electricity Market

# 1. Executive summary

## 1.1 Brief description of the project

This Final Evaluation Report documents and evaluates the results of the project “Creating Markets for Renewable Power in Ukraine” funded by the Global Environment Facility (GEF). The project was commissioned in March 2010, and its ending date has been extended from 2014 to 2017. The GEF project is the technical assistance component to the European Bank for Reconstruction and Development (EBRD) project “Ukraine Renewable Energy Direct Lending Facility” (UREDLF), which was later renamed to Ukraine Sustainable Energy Lending Facility (USELF). GEF funded this project with US\$8.45 million in 2010-2017.

The objective of the GEF-funded project was: “to address policy, finance, business, and information barriers to renewable energy market developments in Ukraine resulting in estimated direct emission reductions of 7 million tonnes of CO<sub>2eq</sub> over the investment lifetime from 90MW of additional installed capacity.” The USELF provides development support and debt finance to renewable energy projects that meet required commercial, technical and environmental standards.

The GEF project consisted of three main components:

1. Legislation, regulation and procedures (GEF funded)
  - a. Institution building
  - b. Relevant legislative and regulatory development
2. Commercial and market development (GEF funded)
  - a. Training and capacity building
  - b. Awareness raising and marketing
3. Financial facilitation
  - a. Project Preparation Support (GEF funded through 2015, then in a more limited way focused on legal support for participants through 2017)
  - b. Direct Lending Facility (Funded by EBRD and other donors).

The GEF funds were used to support elements of all three components. Perhaps most importantly, the GEF funds helped establish the Project Implementation Unit (PIU) for the USELF. The GEF did not co-finance the Direct Lending Facility which was supported by other donors (e.g. EBRD, Clean technology Fund). By the end of 2017, there are 11 lending agreements with renewable energy projects signed by the USELF.

## 1.2 Context and purpose of the evaluation

The purpose of the Final Evaluation (FEV) is to document and evaluate the results of the GEF project, utilising a Theory of Change -based approach to assist in understanding project outcomes and contributions to impacts. The Final Evaluation is required by the GEF Monitoring and Evaluation Policy, and it is consistent with relevant evaluation principles as set out in the EBRD Evaluation Policy and the GEF Monitoring and Evaluation Plan for the project. A team consisting of GreenStream and their subcontractor IDEAS for Energy was hired as independent evaluators for this assignment. The FEV was carried out in September-November 2017. The FEV has been implemented following a participatory and consultative approach ensuring close engagement with the government

counterparts, the project team and key stakeholders. New information for the evaluation has been gathered through interviews of key stakeholders, site visits to projects supported by the USELF, and a survey for project developers.

### 1.3 Main conclusions, recommendations and lessons learned

Overall, the USELF should be viewed as a success story, with the GEF support coming at the right time to help transform the market. There was insufficient knowledge and capacity in the government and local developers to take full advantage the new FiT designed and put forward by the GEF-supported technical assistance. The packaging of GEF funded capacity building and technical assistance with the financial facility funded by other donors resulted in the critical mass needed to significantly transform the market. The USELF's interaction with developers, and ability to perform efficient review and due diligence of projects and advise developers what to improve was a significant asset. The USELF ends with a healthy pipeline of viable projects. There is still a lack of experience in funding projects in the construction phase by other funders (e.g. state and local banks), but the situation is improving. Table A summarizes the final results of the impacts and outcomes from the project results framework.

**Table A. Final results of the USELF impact and outcome indicators and targets.**

Rating	Indicator	Result to be achieved by project end	Final results through 3Q 2017
S	Total CO <sub>2eq</sub> emission reductions as a result of the use of renewable electricity	7 million tonnes (over 20-year lifetimes) by 2014	5.67 million tonnes over 20-year lifetime
HS	New renewable power generation capacity installed (Me <sub>wis</sub> )	Additional 90 Me <sub>wis</sub>	78.7 MW of new renewable energy capacity was created between 2009-2017
S	Total electricity generated from renewables (GWh/yrs.)	370 GWh/yr. by 2014	An estimated 249 GWh/yr is being generated by 3 <sup>rd</sup> Q 2017.
S	Level of policy/regulation/strategy development	Introduction of an enabling regulatory and incentive framework for renewable energy-based power	The GEF project has improved the regulatory scheme related to renewable energy and encouraged banks to support the sector's development. GEF funds helped in reforming the FiTs and other regulatory components, which provided long-term sustainable changes in Ukraine's energy markets.
HS	Establishment of financial facilities for renewable energy-based power	Investment facilitated into renewable energy projects – target US\$150 million	US\$144.8 million have been committed for renewable energy projects
HS	Capacity building	Capacity of NERC and wholesale electricity market to facilitate renewable energy investments increased; <sup>1</sup>	The capacity of NERC and the whole sale electricity market has substantially increased as has that of project developers.

<sup>1</sup> As shown in the Project Results Framework, targets for NERC and the wholesale electricity market were doubling capacity by year 3 and quadrupling capacity by end of project relative to start of project baseline. However, no baseline was established at

Rating	Indicator	Result to be achieved by project end	Final results through 3Q 2017
		capacity for project developers increased <sup>2</sup>	

The following list summarizes key lessons learned during implementation of the USELF.

- A. The Theory of Change was valid: the multi-component approach taken by USELF has been successful overall.** The original design and project strategy is generally consistent with the needs of all stakeholders. Overall, the project implementation approach and management arrangements for this project have been effective to date. Project impacts have been significant on the legislative/ regulatory framework and the overall market for renewable energy in Ukraine due to the EBRD/ GEF involvement, and will continue. The prospects for sustainability regarding project are strong, but not guaranteed due to uncertainties in the long term political support for renewable energy in Ukraine.
- B. Developing a market and identifying viable/bankable projects is possible but takes time and support.** The program harnessed significant interest that was building in Ukraine and helped to build momentum, but the process took longer than anticipated due to a variety of internal and external factors. While the concept was sound, initial assumptions regarding the speed of uptake were somewhat overoptimistic for the situation in Ukraine.
- C. The mix of technical skillsets of the consortia hired to support the different components was valuable and appropriate.** The components required specialized skillsets and also allowed activities to move forward simultaneously on multiple fronts. For ongoing implementation, the PIU needs access to experience with all technologies, as well as with legal and financial and Environmental, Social and Governance (ESG) components. Fichtner and IMEPOWER's mix of part time staff with different specialties appears to have worked well. In addition to general awareness raising trainings, developers needed tailored support with guidance as specific as possible to their project needs.
- D. The USELF's willingness to adapt to stakeholder feedback and external conditions contributed to its successes.** Adaptive management is generally being practiced by the project managers and consultants. For programs like this it is important to be flexible in implementation, while remaining within the overall framework to adapt to changing conditions, new understandings and evolving stakeholder needs. For example, the combination of ad-hoc and systematic information exchange has proven to be very effective and helpful for all involved. The technical support provided by the PIU evolved somewhat over time to adapt to updated.

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the time and no specific scoring system was never implemented. Therefore this evaluation used more qualitative rubrics and backcasting to estimate capacity built.

<sup>2</sup> Specific targets for developers were to have capacity quadrupled by the end of project. As no baseline was established at the time and no specific scoring system was never implemented, this evaluation used more qualitative rubrics and backcasting to estimate capacity built.

- E. The USELF was able to recover from a period of internal and external instability.** However, no-cost extensions allowed the USELF to weather a difficult period to ultimately deliver successfully on its objectives and develop a significant pipeline should additional financing become available. During a middle phase the USELF experienced external challenges due to political instability at the same time that staff was changing at both EBRD and within the PIU.
- Political instability. It is very difficult for projects to move forward in an unstable political environment. Even when all barriers within the program's sphere of influence have been addressed, projects may still struggle. Similarly, local governments may create problems or delays despite national priorities.
  - Extensive staff changes, particularly occurring simultaneously can reduce momentum and reduce efficiency due, in part, to loss of institutional memory.
- F. The USELF PIU has accumulated a unique and valuable perspective on most renewable energy projects in Ukraine.** They have screened more than 180 projects, and conducted due diligence for over 30, in addition to the loan agreements that have been signed. This gives them unusual insight into both the bad and good practices and therefore quickly provide meaningful feedback to developers, investors, banks whether any particular project can be implemented and/or what changes would be needed for it to become viable.
- G. The electricity market in Ukraine needs to be reformed;** and there is pressure from the Energy Community towards this reform. EBRD participates in a working group with the Energy Community, developing the new RES support mechanism for the post-2030 period.

*There are also valuable lessons from the first phase captured in the MTR that are worth carrying forward:*

- H. In a project with a number of consultancy organisations involved, it is important to have coordinated interaction.** The project's approach to coordination of consultancy organisations has been identified as a key strength. This interaction should start very soon after contracts are signed between the different organisations. This interaction should be sustained throughout the project in a formalised, organised way by the project manager.
- I. A key success factor for the project in attracting interest to the financial facility and having a broad impact has been ensuring representation of the facility at various forums and significant outreach to potential investors.** In a project developing an investment facility that is based upon increasing deal flow, it is critically important that representatives of the investment facility (either the PIU or EBRD) become involved in and represent the project in various forums in order to attract interest in the finance facility from amongst potential project developers/clients.
- J. In estimating costs for investment and associated GHG reductions the full project investment costs (including VAT cash flows) should be considered.** It appears that for this project the calculations did not take into account at least some of these factors, leading to an over-estimation of expected GHG reductions and MW installed due to investments. A more detailed financial and market analysis of likely types of projects to be developed could also be helpful to estimate Internal Rates of Return for different technologies based on given Green tariffs, and likely investment and Operations and Maintenance costs.
- K. Measurements of changes in capacity are challenging to define and track, but this must be dealt with explicitly at project inception and throughout project implementation.** In this

project, these issues do not appear to have been dealt with explicitly at the outset, making monitoring and evaluation of capacity changes more challenging because they must happen after the fact. These issues need to be made clear in the ToR of consultancy firms involved in projects that include capacity building. If necessary, it may require briefing and support by EBRD if the consultancy firms are to effectively implement sophisticated monitoring approaches in a way that is consistent across different projects.

The following recommendations are designed to be forward looking and point out good practices to support other initiatives seeking to benefit from the learning on the USELF's experiences. They are drawn from both the strengths and weaknesses of the USELF as implemented.

1. **Design a multi-component approach tailored to local circumstances to provide a foundation for success.** The three-component approach with different consortia with specialised expertise, stakeholder engagement profiles, and timelines worked well to address the complexity of the work needed. There are a variety of complex barriers that must be addressed to facilitate a market for renewable energy, projects still may not move forward if only some of these are addressed. Management processes should include regular coordination between consortia to avoid duplication or gaps as well as to maximize synergies.
2. **Design results framework using practical and meaningful indicators relevant for the implementation team as well as funders.** Consider how the indicators are to be tracked in practice, especially for outputs and outcomes. As part of the outputs, seek to include leading indicators that will point toward the outcomes (and impacts) to increase relevance for the implementation team. Avoid overreliance on quantitative indicators that are seen as easy to track, yet do not provide especially meaningful information. Review assumptions for linked indicators, such as regarding how investments will translate into final impacts (e.g. renewable capacity, annual generation, and GHG emission reductions) and the sensitivity to different mixes of renewable energy types.
3. **Build in comprehensive and ongoing engagement of the range of stakeholders.** It is also important to proactively tailor both the engagement strategy and deliverables to meet the needs of the variety of stakeholders.
4. **Allow sufficient time for implementation of all components to optimize cost effectiveness.** The development of the regulatory framework and initial awareness raising and general capacity building were completed within 4 years, however it took a few more years for that to translate to a sufficient and healthy pipeline of viable projects.
5. **Adaptive management is a necessity.** Within the core framework, it is inevitable that adjustments will be needed along the way to adapt to changing external circumstances and evolving stakeholder needs. The implementation structure should allow sufficient flexibility for the implementation team as well as periodic review points to facilitate the necessary evolution, such as in the nature of the technical assistance provided to regulators and project developers.
6. **Consider a regular engagement strategy with overlapping and synergistic initiatives.** To be effective, this needs to be built into the implementation structure including the results framework or will risk being deprioritized or forgotten.
7. **Make decisions on renewal 4-6 months in advance of break point to avoid loss of momentum.** This will help minimize inefficiency in implementation as well as avoiding undue

impact on developers. Plan to evolve the approach rather than completely end the program. This will more fully leverage learning and stakeholder contacts developed.

8. **Ensure there are mechanisms to preserve institutional memory in the midst of inevitable staff changes.** Core team members at both EBRD and the USELF PIU changed at a similar time and coincided with a loss of momentum (also due to external factors). It is possible that important institutional memory and documents may not have been transferred to the new responsible parties., which impacted the FEV team's ability to conduct a comprehensive review. To help mitigate these situations, additional mechanisms to preserve institutional memory and stakeholder relations are useful. It is also important to maintain appropriate turnaround times for application processing to facilitate developer trust.

## 2. Introduction

The objective of this report is to document the results of the final evaluation of the Global Environment Facility (GEF) funded project, “Creating Markets for Renewable Power in Ukraine (CMRPU)” which provided complementary and enabling services to support the European Bank for Reconstruction and Development’s (EBRD) Ukraine Renewable Energy Direct Lending Facility (UREDLF, later renamed to Ukraine Sustainable Energy Lending Facility, USELF). This final evaluation provides an opportunity to reflect on the successes and challenges for the USELF as well as facilitating the reporting of progress and impacts to the GEF Secretariat.

GreenStream and their subcontractor, IDEAS for Energy, were hired as independent evaluators to ensure the final evaluation was “credible, unbiased, consistent, and well documented” in line with GEF requirements. The evaluation was conducted from October through November 2017 with the following team:

- Julia Larkin (IDEAS for Energy): Team Leader and Lead Evaluator
- Yevgen Groza (Ukraine): Local Renewable Energy Finance Expert
- Anna Laine (GreenStream): Home Office Coordinator
- Aleksi Lumijärvi (GreenStream): Home office Renewable Energy Expert.

### 2.1 Project background

Under preparation since March 2008, the project gained GEF Chief Executive Officer (CEO) Endorsement in 2010 and officially began implementation on March 2010. GEF provided a Project Grant of a total of US\$8.45 million for a suite of technical and regulatory assistance activities. In addition, GEF used a grant of US\$133,870 for Project Preparation<sup>3</sup> (project preparation documents). The objective for the GEF funding support was:

“to address policy, finance, business, and information barriers to renewable energy market developments in Ukraine resulting in estimated direct emission reductions of 7 million tonnes of CO<sub>2eq</sub> over the investment lifetime from 90MW of additional installed capacity.”

See Table 1 for the components of the project<sup>4</sup> that, were intended to facilitated barrier removal in the renewable energy market creation in Ukraine<sup>5</sup>:

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<sup>3</sup> GEF project webpage: <https://www.thegef.org/project/creating-markets-renewable-power-ukraine>

<sup>4</sup> Terms of Reference for the project GEF Final Evaluation – Ukraine Sustainable Energy Lending Facility – Creating Markets for Renewable Power in Ukraine

<sup>5</sup> Mid-term Review of the EBRD-GEF Project “Creating Markets for Renewable Power in Ukraine”

**Table 1. Components of the GEF project Creating Markets for Renewable Power in Ukraine**

Component 1 Legislation, regulation & procedures		Component 2 Commercial & market development		Component 3 Financial facilitation	
Institution building	Relevant legislative and regulatory development, incl. environmental procedures and due diligence	Training & capacity building	Awareness raising & marketing	Project Preparation Support	Direct Lending Facility

The GEF funds were used to support elements of all three components – all of (1) the legislative and regulatory reform, all of (2) commercial and market development and the (a) project preparation support of (3) financial facilitation. Perhaps most importantly, the GEF funds helped establish the Project Implementation Unit (PIU) for the Direct Lending Facility (3a), which provides technical assistance throughout the supply chain to develop a flow of bankable projects in addition to its administrative functions. However, the regulatory reform (e.g. sample regulatory text) and market development (e.g. trainings) are also vital components of the project, as the lack of adequate legislative and regulatory frameworks was originally seen as the main barriers to large scale implementation of renewable energy projects in Ukraine. The GEF funds were not used for actual project co-financing (3b).

The project was originally intended to last 5 years, and was originally funded by the GEF (USD 8.45 million), the EBRD (USD 76.5 million) and the Clean Technology Fund (CTF) (USD 30 million), of which USD 105 million (or EUR 65 million at project inception exchange rates) was allocated by the EBRD and CTF for a renewable energy finance facility (3b)<sup>6</sup>.

It targets all forms of power generation from renewable energy sources, including hydro, wind, biomass, biogas and solar. However, production and distribution of liquid biofuels are not eligible. The USELF PIU has been implemented by the German consulting company, Fichtner, in collaboration with IMEPOWER Consulting.<sup>7</sup> Fichtner also lead component 2, with support from the consortia leading the other components. A consortium led by AF-Mercados EMI with Exergía, Ramboll, and Metropoliya MC handled component 1a and a consortium led by Black & Veatch with Ecoline and EcoSocial Solutions delivered component 1b.

## 2.2 Scope of the evaluation

The scope of the evaluation was to assess the regulatory, technical assistance, and direct program implementation activities funded by the GEF from inception in 2010 to GEF funding depletion at the end of 2017. However, this can only be appropriately evaluated by placing these activities within the

<sup>6</sup> Terms of Reference for the project GEF Final Evaluation – Ukraine Sustainable Energy Lending Facility – Creating Markets for Renewable Power in Ukraine

<sup>7</sup> USELF website: <http://www.uself.com.ua>

context of the broader USELF that included project co-financing and other project support that was simultaneous to the GEF support.

A simplified graphic of USELF’s theory of change that illustrates the program’s intervention logic, is provided in Figure 1. The activities supported by the GEF are the formal scope of this evaluation, and are indicated by the green boxes. From 2015 through the end of 2017, GEF funds were used in a more limited way to provide legal support to USELF clients strictly for project preparation purposes. The theory of change helped guide the evaluation as it provided the hypotheses for how and when outcomes and impacts from the USELF were anticipated to manifest.

The theory of change for the USELF does not exist in isolation; instead, there are a range of external contextual factors and other market and regulatory influencers that may act to either help or hinder the achievement of the USELF against its objectives, and the extent to which GEF-funded activities specifically contribute to the achievement of desired outcomes. This evaluation sought to place USELF activities within the overall context of the evolving policy, institutional and market environment for renewable energy in the Ukraine.

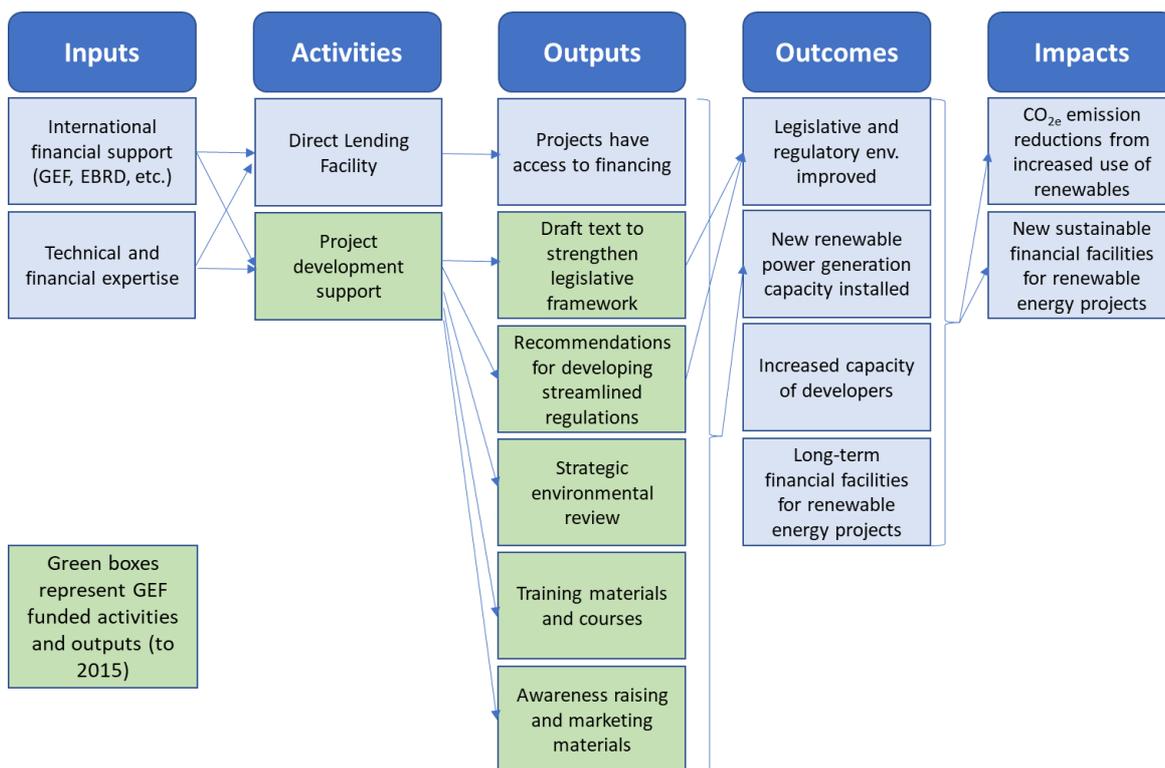


Figure 1. USELF Theory of change diagram.

## 2.3 Key issues addressed

The evaluators used the criteria of relevance, effectiveness, efficiency, results and sustainability to assess the regulatory, technical assistance, and direct program implementation activities funded by the GEF from inception in 2010 to GEF funding depletion in 2017.

### 2.3.1 Evaluation questions by criteria

See Table 2 for the evaluation questions by criteria.

**Table 2. Evaluation questions by GEF criterion**

Criteria	Definition	Evaluation question
Relevance	The extent to which the activity is suited to local and national environmental priorities and policies and to global environmental benefits to which the GEF is dedicated; this analysis includes an assessment of changes in relevance over time	Were the GEF-funded activities sufficiently relevant to target regulatory, market and institutional barriers relating to capacity for and attractiveness of renewable power projects in Ukraine (i.e. what activities were funded and do they map to the barriers)?
Effectiveness	The extent to which an objective has been achieved or how likely it is to be achieved	How effective were the GEF-funded activities at overcoming the targeted barriers relating to the capacity for and attractiveness of renewable power projects in Ukraine?
Efficiency	The extent to which results have been delivered with the least costly resources possible	How efficient were the GEF-funded activities at overcoming the targeted barriers relating to the capacity for and attractiveness of renewable power projects in Ukraine?
Results	In GEF terms, results include direct project outputs, short- to medium-term outcomes, and progress toward longer term impact including global environmental benefits, replication effects, and other local effects	What were the key outputs and outcomes of the GEF-funded activities (e.g. emission reductions, capacity built, renewable power generated)? What is known about the longer-term impacts and the contribution of the GEF-funded activities to achieving them (e.g. any increase in likelihood of more renewable energy projects in Ukraine in the future)?
Sustainability	The likely ability of an intervention to continue to deliver benefits for an extended period of time after completion; projects need to be environmentally as well as financially and socially sustainable	What can be determined about the longer-term sustainability of the impacts now that the GEF funds have been depleted (e.g. are more renewable energy projects likely due to lasting changes contributed to via the GEF-funded activities)?

## 2.4 Methodology for the evaluation

The evaluation was designed to be fully consistent with the GEF Monitoring and Evaluation (M&E) Policy and the project's M&E Plan, as well as relevant evaluation principles set out in the EBRD Evaluation Policy. As per the GEF M&E Policy, this evaluation reviewed the implementation

processes, including tracking of activities and financial resources, delivery of outputs, and progress toward outcomes. This evaluation approach was grounded in the following key principles:

- **Enabling effective stakeholder engagement** by ensuring the major stakeholder groups were offered a convenient channel through which to participate (achieved through a mix of in-person and telephone/skype interviews, and/or online survey in English or Ukrainian);
- **Providing a broad, overall assessment** of the effectiveness of the GEF-funded activities at a program-level, complementing with case-studies with broader engagement across a wider group of developers;
- **Centering on an assessment of the five GEF criteria** of relevance, effectiveness, efficiency, results to date, and the direction of travel towards long-term impacts and sustainability.
- **Building upon the Mid-Term Review (MTR)** completed by Eco Ltd., covering the project's implementation from inception in March 2010 through to the beginning of October 2012. At the time, the project appeared to be well on track to successfully facilitating creation of a viable market for renewable power in Ukraine.
- **Ongoing communication with EBRD** throughout the evaluation.
- **Maintaining confidentiality** of commercially confidential or otherwise sensitive information during the evaluation, in drafting the final report, and after the evaluation has been completed.

Evidence from stakeholder engagement, document review, and case studies were analysed within the context of the theory of change, which illustrates the causal assumptions through which the USELF is expected to operate.

The most rigorous forms of impact evaluation (such as experimental approaches) address the issue of attribution by identifying a counterfactual. In the case of the GEF contributions to USELF, it was not possible to identify a counterfactual (i.e. to test what would have happened in its absence). This evaluation therefore relied on a non-statistical, theory-based evaluation, which used qualitative data to evaluate the contribution of the GEF-funded activities against its theory of change.

For example, the evaluation team sought to isolate the contributions most directly linked to GEF-funded activities, such as by asking stakeholders questions that address different points in time and triangulating evidence. Given the degree of staff changes at key stakeholder institutions, including EBRD, Fichtner and State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEE), the evaluation team used the information from the Mid-term Review (MTR), completed in April 2013 as the primary source for activities from 2010 through 2012.<sup>8</sup> Therefore, our data collection focused primarily on activities from 2013 through 2015, when GEF provided the funding for the Project Implementation Unit (PIU) was depleted by the end of 2015, and to a lesser extent from 2016-2017 during which the GEF funds were used to provide legal support to USELF clients strictly for project preparation purposes and other donors provided additional support for the PIU.

As already noted in the MTR, a formal baseline assessment of project developer and regulator capacity was not conducted at the time. Therefore, this evaluation used more qualitative rubrics and backcasting to estimate capacity built.

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<sup>8</sup> Some documentation requested by the FEV team was missing. The list of documents reviewed is in Annex E.

## 2.4.1 Evaluation approach by indicator

Table 3 provides the complete results framework for the GEF-funded activities developed at the time the GEF funding was originally approved.<sup>9</sup> The column on the far right maps the data collection approaches used for the specific impact, outcome and output indicators during the Final Evaluation (FEV).

**Table 3. Project Results Framework for the GEF-funded activities of the USELF**

Project Strategy	Objectively Verifiable Indicators	Sources of Verification	Assumptions	Approach for Final Evaluation
<b>Impact</b>				
<p><i>GEF Strategic Priorities:</i> Strategic Program 3: Promoting Market Approaches for Renewable Energy</p>	<p>Total CO<sub>2eq</sub> emission reductions as a result of the use of renewable electricity – target 7 million tonnes (over 20year lifetimes) by 2014</p> <p>Total electricity generated from renewables (GWh/yr.) – target 370 GWh annually by 2014</p>	<p>Reporting from project sites, data from feasibility studies, verification of savings and electricity generated for all or a representative sample of projects</p>	<p>Renewable energy service providers, developers and Independent Power Producers (IPPs) will find the line of business profitable</p> <p>Implementation of project activities will foster renewable energy and lower CO<sub>2eq</sub> emissions</p>	<p>The evaluation team reviewed reporting from a sample of project sites and summary reporting from Fichtner. Case studies of a sample were conducted for projects within the GEF funded project window.</p> <p>The FEV team received insufficient information to fully review the methodology for calculating emission reductions and validate the direct emission reductions resulting from the project. However, as the capacity built and GWh produced are well documented within EBRD as well as the Ukrainian Government the FEV team has no reason to believe the reported figures are inaccurate.</p>
<b>Outcomes</b>				
<p>Policy, finance, business, and information barriers to renewable energy market developments in Ukraine are removed, thus facilitating growth in the renewable energy</p>	<p>Introduction of an enabling regulatory and incentive framework for RE based power</p> <p>Investment facilitated into renewable energy projects – target USD 150 million</p>	<p>Existence of legal documents, evidence of framework being used within investments.</p> <p>Sponsor's regular reporting to the project as part of financing</p>	<p>Regulation currently under discussion is, with the support of the programme, indeed enacted and enforced.</p> <p>The Program overcomes existing renewable energy</p>	<p>The evaluation team reviewed the legislative, regulatory and incentive framework for renewable energy in Ukraine, as well as evidence drawn from internal project reporting and stakeholder interviews to provide an updated</p>

<sup>9</sup> from Annex A of Request for CEO Endorsement (GEF 3535) for "Creating Markets for Renewable Power in Ukraine" (14 January 2010)

Project Strategy	Objectively Verifiable Indicators	Sources of Verification	Assumptions	Approach for Final Evaluation
markets	New renewable power generation capacity installed (Me <sub>i</sub> ) – target 90 me <sub>wis</sub>	facility monitoring.  Compilations of project data reported by sponsors	market barriers and builds a sustainable renewables market capacity  The barriers we identified are indeed the principal constraints to growth in this area.  There is no major deterioration in the macro economic and political climate, and Ukraine emerges from the current financial crisis within the next two-three years.	assessment of the contribution of GEF-funded activities to improvements.  The approach for updating investment figures and capacity installed was the same as that for emission reductions listed above.
<b>Outputs</b>				
Component 1: Legislation, regulation & procedures	A favourable environment for renewable energy created including: * RES law revised by Verkhovna Rada to remove deviations from good international practice * Feed-in tariff methodologies and procedures approved by National Energy Regulatory Commission (NERC) and effective * Detailed technical and operational procedures for assessment and approval of renewable energy projects by distribution companies adopted and effective * Streamlined procedures for permitting of renewable energy projects adopted  Capacity of NERC and Wholesale Electricity Market (WEM) to facilitate renewable energy investments  – target: x2 by year 3; x4 by end of project against start of project baseline	Legislative and procedural documents  Survey of capacity shows change in availability of information  Annual expert assessment on the state of policy development  Approvals of SERs	Institutional and political barriers can effectively be overcome through analysis, information and co-ordination activities	As discussed in Outcomes above, the evaluation team reviewed the legislative, regulatory and incentive framework for renewable energy in Ukraine, as well as evidence drawn from internal project reporting and stakeholder interviews to provide an updated assessment of the contribution of GEF-funded activities to improvements.  Data collection also included an e-survey of developers.  As no baseline was established at the beginning and no specific scoring system was never implemented, this evaluation used more qualitative rubrics and backcasting to estimate capacity built for NERC and WEM.

Project Strategy	Objectively Verifiable Indicators	Sources of Verification	Assumptions	Approach for Final Evaluation
	Strategic Environmental Reviews (SER)s completed and approved by authorities covering key regions with RES potential			
Component 2: Commercial and market development	<p>Average “renewable energy capacity score” – target x4 by end of project</p> <p>Targeted information available to investors</p> <p>Number of firms reached through marketing for investments in renewable energy projects: Target 20</p>	<p>Survey of developers participating in training</p> <p>Surveys of impacts of awareness raising activities</p>	With effective market support barriers to investment can be sufficiently reduced to make investment profitable and attractive.	<p>Data collection consisted primarily of a survey of developers, supported by a review of the MTR, documentation on the market and interviews with key stakeholders.</p> <p>As no baseline was established at the beginning and no specific scoring system was never implemented, this evaluation will use more qualitative rubrics and backcasting to estimate capacity built for investors and developers.</p>
Component 3: Financial facilitation	<p>At least 10 projects financed and connected to the grid</p> <p>At least 75% of projects financed on limited recourse basis</p> <p>Commercial finance attracted to cover at least 20% of the total borrowing under the facility</p> <p>Commercial success of the projects and undisturbed repayment of loans</p>	<p>Regular monitoring and reporting of support consultants</p> <p>Quarterly reports from sponsors</p> <p>Annual financial statements from sponsors</p>	Macro-economic conditions are such that investment in renewables continues to be attractive, and banks have capital for investment.	The evaluation team reviewed the project documentation from Fichtner and EBRD, supported by the e-survey of developers, to assess these financial facilitation indicators.

## 2.5 Structure for the remainder of the evaluation report

This section (2) outlined the evaluation team’s approach and the evaluation questions for the evaluation. Section 3 summarizes the USELF and its development context. The overall findings and conclusions are in Section 4, and the recommendations are in Section 5. Section 6 contains lessons learned. Annexes include: the final evaluation’s Terms of Reference, itinerary of data collection activities, list of people interviewed, documents reviewed, and summaries of case studies as well as the developer questionnaire and summary of results.

## 3. The Project and its development context

### 3.1 Project start and its duration

The internal GEF Project Identification Form (PIF) approval occurred in December 2007 with the Work Programme approval in February 2008 and Project Preparation Grant (PPG) approval the following month.

This GEF project gained CEO Endorsement in 2010 and officially began implementation in March 2010, intended to go through 2015. It has received no-cost extensions through 30 June 2017. The activities for Components 1 and 2 were completed by 2013. The GEF continued to support the PIU through 2015. From 2015 through the end of 2017, GEF funds were used in a more limited way to provide legal support to USELF clients strictly for project preparation purposes.

Funding for the GEF component of the USELF was depleted by December 2017.<sup>10</sup> Funding from other donors also supported the PIU from 2015 through 2017, and also provided , additional funding for project financing,.

### 3.2 Implementation status

The GEF project has completed approximately 7.5 years of operation. As mentioned above, the GEF-funded activities have been complete since the 4<sup>th</sup> quarter of 2017, including all of the Component 1: Legislation, regulation & procedures and 2: Commercial and Market development activities. However, the USELF was slower to sign agreements with viable projects than originally anticipated. The Component 3 activities funded by the GEF (PIU) have continued through 2017 through support from other donors (e.g. Governments of Japan and Sweden), who also provided financing for projects. EBRD is actively considering continuing the USELF into 2018 and beyond, and are also considering expanding the scope to larger scale renewable energy projects.

The main Component 1 activities were:

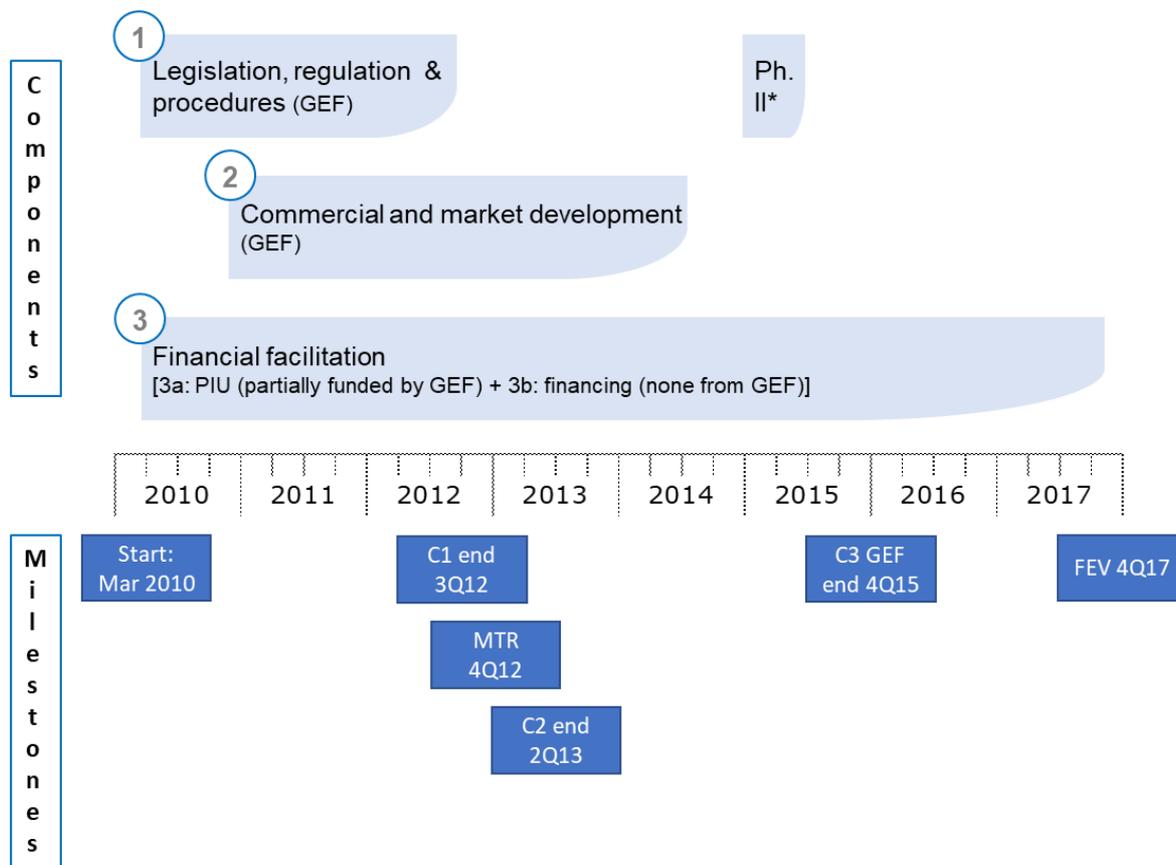
- Aligning Ukrainian legislation in the area of Electricity and Renewable Energy Supply (E-RES) with the provisions of the EU and the Energy Community Treaty, in particular, introduction of the green tariff, and policy dialogue;
- Drafts for such secondary legislation as RES Code, guarantees of origin regulation; technical code for wind power plants;
- Tools and methods required to accompany and monitor the sustainable implementation of E-RES (including draft Local Share Content Methodology; Rules for RES Connection to the Grid; Compensation mechanism for connection cost);

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<sup>10</sup> Following an agreed extension, the GEF project was financially closed on 30/6/2017.

- Capacity building activities, such as study tours, trainings, delivering of methodological materials establishing implementation capabilities in the various entities that have to be engaged for a successful and accelerated development of E-RES in Ukraine).

**Error! Reference source not found.** illustrates the timeline for the USELF including key implementation milestones.



**Figure 2. USELF Timeline with components and key implementation milestones.**

\*While the original tasks envisioned for Component 1 were completed by the 3<sup>rd</sup> quarter of 2012, EBRD and the PIU provided additional short-term regulatory support in the first half of 2015 due to “the unclear situation concerning the revision of the green tariff law and the increased insecurity over tariff payments and UAH/EUR exchange rate protection.” At which time the implementation team consulted with the regulatory authority (National Energy and Utilities Regulatory Committee, NERUC) and moderated discussions about green tariff level for various technologies and other aspects of the new law among policy makers and other stakeholders. Other regulatory support activities included:

- Preparation of a summary of the Draft Law 2010 and comparison of effective green tariff rates against proposed new tariffs (09.02.2015).

- Participation in the hearing of NERC concerning the adoption of the green tariff on 26 and 27 February 2015.
- Preparation of a Tariff Study for the RES sector.

It is important to note that while the general awareness raising and educational activities (e.g. workshops) envisioned under Component 2 were completed with the finalization of the Developer Manual in the 2<sup>nd</sup> quarter of 2014, the PIU has continued marketing activities directly related to project development as well as project-specific support for participating developers through 2017. The main components/tasks the PIU has been undertaking are:

- Marketing the Facility and ensuring that a range of stakeholders are informed about the Facility and its benefits;
- Capacity building and training support through training needs assessment and trainings; development of a Developers Manual;
- Technical Due Diligence to ensure effective screening of projects, and supporting potential borrowers in identifying appropriate investment opportunities and developing proposals for financing under the Facility;
- Screening and due diligence ensure that borrowers proposing projects are, in all respects, compliant with national and applicable EU, environmental, health, safety and labour standards;
- Tracking, monitoring and reporting system to ensure the availability of accurate data for the utilisation of the Facility in place.

### 3.3 Problems that the project seeks to address

There is an acute need to improve energy security in Ukraine and reduce the environmental impact of its power sector. Ukraine is heavily dependent on imported energy, with 75% of its gas and 90% of its oil and oil products being imported<sup>11</sup> at the time of project generation. Although Ukraine has significant coal resources, if Ukraine were to increase its dependence on coal to the extent envisaged in the Energy Strategy, the impact on greenhouse gas (GHG) emissions would be huge. Ukraine's electricity generation capacity is also aging, inefficient and poorly utilised.

Renewable energy has the potential to play a key role in addressing both these issues. Ukraine has significant resources of wind, small hydro, biomass, biogas and solar energy. Before the implementation of the GEF and EBRD-supported project, there were a number of barriers to the implementation of renewable energy projects in Ukraine, as outlined in the Request for CEO Endorsement (RCE) for this project. These barriers can be summarised as follows:<sup>12</sup>

- *Legislative, regulatory and procedural barriers* include uncertainty and lack of transparency about regulations and procedures relating to land acquisition, planning approvals, grid connection and take-off agreements.
- *Financial barriers* result from a lack of technical expertise among banks to appraise renewable energy projects, and an unwillingness to consider longer-term and limited recourse financing.

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<sup>11</sup> IEA 2009, Energy Balance for Ukraine.

<sup>12</sup> Cite MTR

- A *lack of appropriate business skills and information* leads to a misperception of the attractiveness of renewable energy investments, as well as a limited ability to develop strong project proposals.

### 3.4 Immediate and development objectives of the project

The GEF project objective was: “to address policy, finance, business, and information barriers to renewable energy market developments in Ukraine resulting in estimated direct emission reductions of 7 million tonnes of CO<sub>2eq</sub> over the investment lifetime from 90MW of additional installed capacity.”

As outlined in Section 2.1, the GEF project was designed to address the barriers identified through three interlinked components:

- Component 1 began at the GEF’s Project Preparation Grant (PPG) stage and involves assisting the Ukrainian Government in creating an appropriate legislative and regulatory environment, as well as streamlining procedures for the development of renewable energy in Ukraine. Activities also include carrying out a Strategic Environmental Review (SER) of the potential impacts of renewable energy projects in the country and issues that need to be addressed.
- Component 2 involves technical assistance targeting project developers. This component provides training and capacity building as well as awareness-raising and marketing of the opportunities for renewable energy investment.
- Component 3 involves addressing the financial barriers tackled through the establishment of a Direct Lending Facility that will provide limited recourse loans to eligible renewable energy projects.

This facility is designed to complement then existing Ukraine Energy Efficiency Programme (UKEEP) facility, which EBRD established to provide credit lines to participating local banks for on-lending to energy efficiency projects. It also involves working one-on-one with project developers to further their projects to ensure that a pipeline of bankable projects is created and sustained. See Section 3.6 for a complete list of project indicators and targets.

### 3.5 Main stakeholders

The primary stakeholders for the USELF are:

- Relevant government ministries in Ukraine, e.g. Ecology and Natural Resources and Ministry of Energy and Coal
- National Electric Regulatory Commission (NERC)
- State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEE)
- Licensing and permitting authorities
- The EBRD, and other international financial institutions (IFIs), e.g. International Finance Corporation (IFC), Nordic Environment Finance Corporation (NEFCO)
- Project implementation team: Fichtner, IMEPOWER, Mercados, Black & Veatch
- Ukraine-based banks
- Current and prospective developers and investors and related industry associations for all renewable energy technologies (e.g. Ukrainian Association of Renewable Energy or Bioenergy Association of Ukraine)
- Other initiatives targeting renewable energy,
- Communities affected by renewable energy projects

- Policy makers in neighbouring countries seeking to stimulate the market for renewable energy in their country.

### 3.6 Results expected

The GEF M&E plan contained several end-of-project indicators and targets, including estimated direct emission reductions of 7 million tonnes of CO<sub>2</sub>eq over the investment lifetime from 90MW of additional installed capacity. Table 4 provides a full list of indicators and targets with the results as reported in the MTR (Oct 2012). The updated results incorporating findings from this evaluation are in Table 10 located in Section 4.3.

**Table 4. Interim progress on USELF indicators and targets (from MTR).**

Indicator	Result to be achieved by project end	Results reported in MTR	Projected results by project end provided in MTR
Total CO <sub>2</sub> eq emission reductions as a result of the use of renewable electricity	7 million tonnes (over 20-year lifetimes) by 2014	0- no project had been commissioned yet	4.16 million tonnes
New renewable power generation capacity installed (Me <sub>wis</sub> )	Additional 90 Me <sub>wis</sub>	0- no project had been commissioned yet	70 me <sub>wis</sub>
Total electricity generated from renewables (GWh/yrs.)	370 GWh/yr. by 2014	0- no project had been commissioned yet	215.7 GWh/yrs.
Level of policy/regulation/strategy development	Introduction of an enabling regulatory and incentive framework for renewable energy-based power	Policies and regulations have been proposed, and some have been adopted, but not all	Complete achievement of the results.
Establishment of financial facilities for renewable energy-based power	Investment facilitated into renewable energy projects – target US\$150 million	Facilities are operationalized and funded. There is sufficient demand but the projects have not yet been developed sufficiently to use the Facility's full potential.	Investment facilitated into renewable energy projects of at least US\$150 million
Capacity building	Capacity of NERC and wholesale electricity market to facilitate renewable energy investments increased; <sup>13</sup> capacity for project developers increased <sup>14</sup>	Capacity has been strengthened at NERC as for project developers (but has not been tracked systematically)	Institutional/human capacity utilized and sustained.

<sup>13</sup> As shown in the Project Results Framework, targets for NERC and the wholesale electricity market were doubling capacity by year 3 and quadrupling capacity by end of project relative to start of project baseline. However, no baseline was established at the time and no specific scoring system was never implemented. Therefore this evaluation will use more qualitative rubrics and backcasting to estimate capacity built.

<sup>14</sup> Specific targets for developers were to have capacity quadrupled by the end of project. As no baseline was established at the time and no specific scoring system was never implemented, this evaluation will use more qualitative rubrics and backcasting to estimate capacity built.



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## 4. Findings and conclusions

To facilitate the accessibility as well as the clarity of the findings, several project findings and results marked were rated according to divisions typically used by the GEF: Highly Satisfactory, Satisfactory, Marginally Satisfactory, and Unsatisfactory. (See Table 5)

**Table 5. GEF Rating scale for achievements.**

Code	Definition	Explanation
HS	Highly satisfactory	The project had no shortcomings.
S	Satisfactory	The project had a few shortcomings.
MS	Marginally satisfactory	The project had some shortcomings.
MU	Marginally unsatisfactory	The project had noticeable shortcomings.
U	Unsatisfactory	The project had major shortcomings.
UA	Unable to assess	The evaluator was unable to assess outcomes on this dimension.

### 4.1 Project formulation

HS	<b>Project formulation</b>	The USELF is in substantial compliance with its major objective. The MTR and FEV teams both found the objective to be appropriately formatted to address the needs identified. The indicators in the results framework have been substantially achieved.
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As discussed in Section 2.1 above, the objective of the GEF project is:

“The proposed project will address policy, finance, business, and information barriers to renewable energy market developments in Ukraine resulting in estimated direct emission reductions of 7 million tonnes of CO<sub>2eq</sub> over the investment lifetime from 90MW of additional installed capacity.”

The FEV concurs with the MTR finding that this objective appears to be appropriately formatted to address the needs identified. As discussed further in Section 4.1.1.1, in response to the concern raised in the MTR that “some of the numerical indicators are likely to be – in retrospect – over-estimated,” EBRD adjusted their approach. The final result for the total CO<sub>2eq</sub> emission reductions is over 80% of the original target, and the total electricity generated from renewables is 67% of target.<sup>15</sup> However, there is now a significant pipeline of viable projects that has been generated largely through USELF activities that are not (yet) reflected in these figures.

Refer to Section 4.3 for final outcomes for all indicators in the results framework.

#### 4.1.1 Conceptualization/design (R)

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##### HS Conceptualization/design

The original design and project strategy is generally consistent with the project objectives, and appropriately addresses the identified barriers and relevant for the needs of stakeholders. The FEV team concurs with the MTR noting that there were some weaknesses in the project results framework (e.g. lack of baselines). While they did not appear to materially affect implementation activities, they do limit the ability to assess impact, especially as it relates to capacity building. The overestimation of emission reductions and capacity built relative to investment makes it unlikely that the project could completely meet the original targets.

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The MTR team explored this issue in-detail and found that “Implementation experience since the project started has largely demonstrated that the basic premises upon which the project was built are valid, and that the project design is appropriate for tackling these barriers. Overall, the design of this project is strong and there are very few significant shortcomings – though there are some issues related to the definition of outputs. The three components and delineation of project activities has allowed for a clear division of responsibilities for implementation. All stakeholders and project implementers (including EBRD staff and consultants) have expressed an overall satisfaction with the project basic design as well as the specific results to be achieved within the project.”

As noted above, it has taken longer than originally envisioned to achieve a sufficient portfolio of operational projects. However, this appears not to be due to the design, but rather in large part to apparently overly-optimistic assumptions on how quickly the enabling environment would shift as well as how quickly developers could learn and adapt to changing market conditions and secure other sources of financing.

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<sup>15</sup> EBRD, 2017. Global Environment Facility Project Implementation Reports: Ukraine - Creating Markets for Renewable Power in Ukraine: GEF FY 2016. November.

#### 4.1.1.1 Review of the project results framework

The evaluation teams assessed the appropriateness of project results framework and associated indicators to document program implementation and measure achievements.

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***The expected impacts of the project from the GEF Request for CEO Endorsement are:***

- Total CO<sub>2eq</sub> emission reductions as a result of the use of renewable electricity – target 7 million tonnes (over 20-year lifetimes) by 2014
  - Total electricity generated from renewables (GWh/yr) – target 370 GWh annually by 2014
- 

This issue was explored in-depth in the MTR. Therefore, the FEV team summarizes and updates the key MTR findings, where new information has become available. (See Table 6) Key issues already identified at the MTR stage include:

- “The expected impacts – while properly formulated in that they are specific, measurable, achievable, relevant and time-bound (SMART) – appear to have been over-estimated related to GHG reductions and MW of installed renewable energy power.” EBRD reported to the FEV team that expectations as well as project priorities were adjusted after the MTR.
  - For example, the MTR noted that “The green tariffs have developed in such a way that wind power and solar power are generally more attractive for investors than biomass, biogas, and small hydropower plants (SHPP). In particular, until around the time of the [MTR], there was no green tariff for biogas projects which suppressed investor interest. ... The pipeline of projects at the time of the RCE [GEF Request for CEO Endorsement] focused on wind projects, SHPP, and biomass/biogas with no solar projects – though many of these projects have not moved forward with USELF resources for a variety of reasons. This is important because solar and wind projects have high capital costs per MWh of production and subsequently per tonne of GHG reduction (by a factor of 2 to 4 times higher than biomass/biogas and SHPP). Solar power also has a high cost per MW installed. Therefore – even though the facility may be fully disbursed, the actual reductions of GHG emissions and production of electricity (both in capacity and actual MWh produced) are unlikely to fully reach the objective set”.
- No baseline was established for capacity building and the approach anticipated for tracking capacity building was not implemented, which limits the ability to assess outcomes from capacity building activities. Though the MTR contained recommendations regarding this point, the FEV team found that no significant changes were made after the MTR. However, the overwhelming majority of the formal capacity building activities of Component 2 were already completed by the MTR. Therefore, the ability to remedy this was already limited in the later stage of USELF.

**Table 6. Summary of Review of Project Results Framework<sup>16</sup>**

Project Strategy	Objectively Verifiable Indicators	Comments from Final Evaluation
<b>Impact</b>		
<i>GEF Strategic Priorities:</i> Strategic Program 3: Promoting Market Approaches for Renewable Energy	Total CO <sub>2eq</sub> emission reductions as a result of the use of renewable electricity – target 7 million tonnes (over 20year lifetimes) by 2014  Total electricity generated from renewables (GWh/yr.) – target 370 GWh annually by 2014	The overall strategic objective, and indicator approach and sources of verification were reasonable. The stated assumptions were simplistic, not fully addressing the complexity of barriers, however these were addressed somewhat at the output and outcome stages.  As discussed extensively in the MTR, the quantities of electricity generated and emission reductions appear to have been over estimated relative to project financing available and anticipated capacity.
<b>Outcomes</b>		
Policy, finance, business, and information barriers to renewable energy market developments in Ukraine are removed, thus facilitating growth in the renewable energy markets	Introduction of an enabling regulatory and incentive framework for RE based power  Investment facilitated into renewable energy projects – target USD 150 million  New renewable power generation capacity installed (Me <sub>w</sub> ) – target 90 me <sub>w</sub> s	The outcome statement, indicator approach, sources of verification, and assumptions were reasonable.  As referenced above, the quantities of electricity generated and emission reductions appear to have been over estimated relative to project financing available and anticipated capacity.  Also, no clear baseline was established for the status of the regulatory and incentive framework, though a discussion is provided in the CEO endorsement and in the final C1a deliverable from Mercados
<b>Outputs</b>		
Component 1: Legislation, regulation & procedures	A favourable environment for renewable energy created including: * RES law revised by Verkhovna Rada to remove deviations from good international practice * Feed-in tariff methodologies and procedures approved by NERC and effective * Detailed technical and operational procedures for assessment and approval of renewable energy projects by distribution companies adopted and effective * Streamlined procedures for permitting of renewable energy projects adopted	The component 1 focus was reasonable and appropriate. The indicator approach and sources of verification have weaknesses. For example, the indicators address factors beyond the USELF's control and could more effectively served as a management tool if they had been framed to more closely reflect actual outputs (anticipated).  Similarly, the MTR noted: "Some of the outputs are not sufficiently clear and some of the metrics for measuring outputs – particularly related to capacity building – have not been sufficiently developed during project implementation (or during project development)."  The MTR already noted that no baseline was established for capacity building of NERC and WEM.

<sup>16</sup> Refer to Table 2 for the complete results framework with sources of verification and assumptions. The information was not duplicated here to minimize report length.

Project Strategy	Objectively Verifiable Indicators	Comments from Final Evaluation
	<p>Capacity of NERC and WEM to facilitate renewable energy investments</p> <p>– target: x2 by year 3; x4 by end of project against start of project baseline</p> <p>Strategic Environmental Reviews (SER)s completed and approved by authorities covering key regions with RES potential</p>	<p>The SER indicator approach was appropriate.</p> <p>The high-level assumption statement may have minimized the complexity of factors involved.</p>
<p>Component 2: Commercial and market development</p>	<p>Average “renewable energy capacity score” – target x4 by end of project</p> <p>Targeted information available to investors</p> <p>Number of firms reached through marketing for investments in renewable energy projects: Target 20</p>	<p>The component 2 focus was reasonable and appropriate. The indicator approach and sources of verification have weaknesses.</p> <p>As already noted in the MTR, no baseline was established for capacity and a score was never developed.</p> <p>Also already noted in the MTR, the ‘targeted information available to investors’ is not clear leading to a missed opportunity of using the results framework as a management tool.</p> <p>The number of firms reached may be an easy but not especially useful indicator to track market development.</p> <p>Regarding sources of verification, surveys of developers were not conducted as assumed.</p>
<p>Component 3: Financial facilitation</p>	<p>At least 10 projects financed and connected to the grid</p> <p>At least 75% of projects financed on limited recourse basis</p> <p>Commercial finance attracted to cover at least 20% of the total borrowing under the facility</p> <p>Commercial success of the projects and undisturbed repayment of loans</p>	<p>The component 3 focus was reasonable and appropriate, and most indicators and sources of verification seem reasonable.</p> <p>The MTR already noted that the definition of “commercial finance attracted” is not sufficiently clear.</p>

#### 4.1.2 Country ownership/Driveness

##### HS Country ownership

The Ukrainian Government was closely involved in developing the policy and legislative framework for renewable energy. With some setbacks, the Government continues to demonstrate its support, though the horizon after 2030 is still unclear.

The MTR examined this issue, noting that “there was already a significant level of interest among renewable energy project developers when the project began...[and] local stakeholders (particularly the Ministry of Fuel and Energy and NERC) were closely involved in developing the policy and legislative framework for renewables.”

The FEV team found that, with some set-backs, the government overall continues to support the feed-in tariff and make adjustments as needed to continue to support the development of renewable energy in Ukraine. Some developers reported a lack of support amongst government officials, especially at the local level, and there have been some regulatory and legislative challenges in the past few years, such as when the government was trying to end connection with EU. Also, the long-term market for renewable energy is still unclear after 2030. With the 10-year window for the Feed-in Tariffs, project developers are rushing to build projects by 2020 to ensure full cost-recovery. However, the government has also periodically taken steps to address issues and reconfirm their commitment to renewables.

For example, interviewees reported a complex and positively evolving story:

- “There was overall challenging time in 2013 (Yanukovich deciding not to sign EU Association Agreement, his “Family” and oligarchs taking control of many assets, start of Maidan Revolution), 2014 (annexation of Crimea, start of the war with Russia, significant economic crisis, devaluation of UAH, first half of 2015 (attempts by the Regulator to reduce feed-in tariffs ignoring provisions of legislation, discussion at the Parliament level about reduction of feed-in tariff rates, still active phase of war with Russia). The result was reluctance on the side of local or international investors to finance any projects. Only starting the second half of 2015 (after approval of changes to “green” tariff legislation, stabilization of UAH, stabilization of the front line with Russia) investors and developers returned to their projects that resulted in restoration of normal investment activity in 2016 and 2017.
- “The terms of power purchase agreements (PPA) with the energy generators were recently changed. The validity of PPAs used to be until 2030; currently the validity is limited by 1 year (and continuously renewed). These changes have worsened the bankability of the projects. The overall validity of the Feed-in-Tariff (FiT) support scheme expires in 2030, and it either needs to be renewed, or an alternative support system has to be developed.”
- “In June 2017, Ukraine adopted the new law which confirmed the support mechanisms for renewable energy. This was voted in the parliament and supported by authorities. Another sign of support was long-term PPAs made by Ukrainian regulator. The mechanism for grid connection is also becoming more transparent, and predictable and less bureaucratic.”
- “Incentives from the government provide strong support to renewable energy development. Since the FiT is set in Euros, it provides protection from currency fluctuation risk. However, stability of the rules is needed, and this is what is currently missing.” [This issue was at least partially mitigated after the interview, as on November 17<sup>th</sup>, 2017 the President has nominated his representatives to the NERC election committee, which means the work of the NERC can move forward.]
- “The existing procedure for project development is complicated: land use permits are provided by the local government, grid connection is decided by the regional power distribution company (though this was recently changed), construction permits are provided by the State construction and architecture inspectors, the FiT is approved by the NERC.”
- “The institutional environment is stable, typically there is no corruption when permits are provided at the level of central/national government. However, pressure can be asserted on the operational business, e.g. in the form of requiring additional payments for repairing the networks, etc. Before 2014, these additional payments were requested often, and this activity was organized on the high level. Now these requests can be still received, but they are

sporadic and not centrally organized. The availability of financing has improved recently, especially as the state-owned banks started to work with the RES sector.”

#### 4.1.3 Stakeholder participation (R)

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<b>HS Stakeholder participation</b>	There has been significant and appropriate stakeholder participation, particularly in the earlier stages of the project. local stakeholders (particularly the Ministry of Fuel and Energy and NERC) were closely involved in developing the policy and legislative framework for renewables, and were thus fully engaged in the design of the project.
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As already noted in the MTR, “The design of this project should be seen in the broader context of continuing efforts throughout [GEF’s Project Preparation Grant] PPG phase to improve the legislative and regulatory environment for renewable power generation. During this period, local stakeholders (particularly the Ministry of Fuel and Energy and NERC) were closely involved in developing the policy and legislative framework for renewables, and were thus fully engaged in the design of the project.”

The MTR reported “The EBRD staff and various consortia involved in implementing the project have done significant outreach to all sorts of stakeholders – including government partners, non-government organizations, local communities, finance institutions, and project developers...The stakeholder engagement was governed by the EBRD’s Environmental and Social Policy Performance Requirement PR10 on “Information Disclosure and Stakeholder Engagement...Information from project developers has assisted in relation to policy framework and SER development, and vice-versa.”

The FEV team found that the EBRD staff and USELF PIU continued to work with the government as needed when issues have arisen, such as during the difficulties reported above in 2014. The USELF PIU is no longer holding trainings, however they do engage one-on-one with different stakeholders in the context of seeking and facilitating project development, as is reported in the Project Implementation Reports (PIRs) to EBRD.

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#### Highlight: Stakeholder Engagement

The MTR reported that “During the scoping phase, well over 100 different stakeholders were identified and approached, of whom 51 were interviewed by the consortium. Following the publication of the draft SER environmental report, the 120-day public consultation period was opened, during which regional public meetings were organised at five different locations across Ukraine. Average attendance at these public meetings was about 25, including representatives from local administrations, businesses, scientific institutions and tourist agencies.”

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#### 4.1.4 Replication approach

While there was no specific replication plan, there are multiple ways the lessons and experiences of the USELF have helped to stimulate similar activities, both in terms of scaling up as well as replicating (portions of) the concept. The FEV team found three types of evidence relating to scale up and replication:

- **Extension of USELF:** EBRD secured support from other donors to provide project financing and to continue to fund the PIU activities originally funded by the GEF project. This builds directly on the GEF funded activities and helped to capture and sustain the momentum generated in the first Phase. The example set by the USELF as well as changing market conditions has also meant that other state and local banks became now active in the RES sector in Ukraine. However, USELF has continued to be the main source of technical assistance in the RES sector for the government. EBRD is currently considering expanding the USELF concept in Ukraine to also include larger scale projects.
- **Stimulating other support for renewable energy:** The approach of USELF is replicated by other players. For example, Ukrgasbank is working in cooperation with IFC to provide project financing. Raiffeisen bank has contracted an external consultant to evaluate biomass/biogas projects, which is similar to the approach used by USELF.
- **Replication of approach in a new area:** One interviewee reported that the Ukraine Public Sector Energy Efficiency Framework (UPSEEF) program launched by the EBRD in Ukraine can be considered as partial replication of USELF experience, but in the area of energy efficiency of public buildings.<sup>17</sup>

## 4.2 Project implementation

The discussion of our assessment of the project implementation is divided into several subsections below to more clearly address different nuances of this complex topic, most of which were also explored in detail during the MTR.

### 4.2.1 Implementation approach (R)

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#### HS Implementation approach

The general management was appropriate and the project implementation structure was effective overall. There were some issues with effectiveness, particularly in the middle period after the GEF funding was depleted that have since been addressed.

The program remained highly relevant for the local context throughout the implementation period.

The EBRD regularly reported progress to GEF using the results framework. However, with the exception capacity development targets and to a lesser extent of monitoring progress toward the GHG emission reduction and, the results framework was not used to its full potential as a management tool.

The implementation team's ability and willingness to engage in adaptive management, such as by tailoring the type of technical support provided, while remaining within overall project parameters should be

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<sup>17</sup> Initiated in April 2017, the EBRD's UPSEEF program is designed to support development of the energy performance contract (EnPC) market in Ukraine by testing and establishing the recently improved legislative framework for EnPC by implementing financing framework for energy efficiency in public buildings. The Framework aims to provide development support and debt finance to EnPC projects which meet required commercial, technical and environmental standards.

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viewed as a strength that contributed to project successes.

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#### 4.2.1.1 Implementation structure

The general management was appropriate and the project implementation structure was effective overall. EBRD managed the project with component work being mostly carried out by three different consultant consortia. (See Section 2.1) The work of the two consortia focusing on Components 1 and 2 were completed by the end of 2012. For the past several years, only the Fichtner-IMEPOWER consortia operating the PIU have been active – providing tailored technical support to interested developers and processing applications. The Bank also has its own processes, e.g. for due diligence and loan approval.

As outlined in Section 4.2.1.1.1 below, usually developers first submit an application (sometimes preceded by a meeting) for financing to the USELF PIU, who work with the developer to get the project application to a stage where it is appropriate for the EBRD banking staff to engage. The interactions between the USELF consultants, the EBRD banking staff, and the project developers is somewhat iterative. The MTR found that, “Overall, there appears to be consistent communication between the consultants and EBRD staff within Ukraine.”

The MTR also reported that “The management arrangements of the financial facility between the EBRD Bank staff – both in Ukraine and in London – and the consultants providing project development support appears to be effective and there are no outstanding issues that have been identified related to the facilitation of the financial investment facility. The delineation of responsibilities between the consultants and the Bank staff has been clear and the project developers have expressed that most interactions have been positive and helpful.”

The FEV team found that there was a middle phase (2014-2016) where the USELF was seeing less activity and the relationships between the EBRD and the PIU faced some challenges, including staff changes both at EBRD and Fichtner that resulted in a loss in momentum and institutional memory, such as familiarity with projects. The stakeholders also noted the loss in momentum was due in large part to funding uncertainties and the associated decrease in prioritization rather than deeper structural issues. However, since further staff changes and conscious reprioritization by Spring 2017 the implementation appeared to be running smoothly with new applications being received and processed.

##### 4.2.1.1.1 USELF from a developer’s perspective

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#### Highlight: Developer Feedback

Developers familiar with the USELF that responded to an e-survey reported high satisfaction overall with the USELF PIU. When asked to rate how satisfied with they “with your interactions with the USELF application processing,” all who had submitted an application (10) reported high satisfaction, choosing either a 4 or 5 on a 5-point scale, with the average at 4.6.

The overwhelming majority (12 of 14; 85%) reported that they had received tailored technical support from the USELF PIU beyond standard application processing, such as regarding structuring the project, preparing documents, project financing and/or legal issues, which they found helpful.

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The 12 developers who had submitted applications for financing reported that the USELF financing has or will

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play an important role in the project. Using a scale of 0 to 5, all chose 3, 4, or 5, averaging 4.4. Five developers reported that the USELF team had also helped them secure other financing.

(Refer to Annex F for a full summary of survey results.)

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The USELF structure provides direct financing of small and medium-sized projects directly from the EBRD through a simplified and accelerated approval process, intended to reduce operating costs. In addition to debt financing, the USELF provides technical support for the development of projects that meet commercial, technical and environmental compliance criteria.

Targeted projects include all forms of power generation using renewable energy sources, including small hydro, wind, biomass, biogas and solar. Biomass and biogas production should come from organic products and/or waste.

Advantages of participation for developers are as follows:

- Loans starting from 1.5 million euros;
- Reduction of operating expenses;
- Long-term financing with limited recourse;
- Free technical assistance from international and local experts.

The project cycle for USELF projects is<sup>18</sup>:

1. The Developer sends application form (that can be downloaded from web site) with some supporting materials/presentations to USELF.
2. If the project looks good, the USELF Implementation Team prepares 2-page fact sheet and sends it to the EBRD (or 'Bank') asking for permission to prepare the Project Screening Report (PSR).
3. After the green light from the Bank, the USELF Implementation Team sends questionnaires to the Developer, collects information and prepares the PSR focusing on technical concept of the project, project structure, implementation arrangements, sponsor, its financial capacity, experience, etc.
4. After submission of the PSR, the Bank prepares the Concept Review Memorandum (CRM).
5. After CRM approval, the Bank and the Developer sign the Mandate Letter and the Bank gives the green light to the USELF Implementation Team to start preparation of the Project Appraisal Note (PAN).
6. When working on the PAN, the USELF Implementation Team goes into more details on the sponsor and technical side and also prepares the financial model, Environmental and Social Impact Assessment (ESIA) section and permitting section.
7. After PAN submission, the USELF Implementation Team prepares the Final Review Memorandum. At the Bank's request, the USELF Implementation Team also prepares

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<sup>18</sup> Provided by the USELF PIU

relevant environmental and social documents required for disclosure to public and approval of the decision on loan provision.

8. After signing of the Loan Agreement, the USELF Implementation Team supports the Bank in monitoring the project's implementation, in particular, helping to check preconditions for disbursement of the loan tranches.

The USELF Implementation Team has noted that there is some flexibility in the above steps as every project is different. For example, sometimes it makes sense to do the financial model at the PSR stage, not waiting for the PAN stage. In another case, it sometimes it makes sense to skip PSR and do the PAN right away such as when project is fully permitted and the Developer is already known to the Bank.

#### **4.2.2 Relevance to local context**

The program remained highly relevant for the local context throughout the implementation period, and adapted over time to meet changing market conditions and specific developer needs.

The MTR noted "There has been a high level of engagement and participation between the consultants and the project developers, with the consultants responding quickly and adapting to the needs of the project developer stakeholders. There has also been significant engagement between the project developers, the consultants helping with project development, and the consultants working to improve the regulatory framework."

The FEV team found that the USELF PIU continued to offer tailored support to developers and engage with government officials when needed in the later phase of implementation as well.

#### **4.2.3 Use of project results matrix**

The EBRD regularly reported progress to GEF using the results framework. However, with the exception of capacity development targets and to a lesser extent of monitoring progress toward the GHG emission reduction and, the results framework was not used to its full potential as a management tool. However, this did not appear to materially affect actual implementation activities.

The MTR found that "The indicators in the project results framework has been used during implementation as a management and M&E tool – but mostly focused on the amount of investments/projects to be implemented and (to a lesser extent) on the GHG reductions and the MWh produced. The pieces of the results framework regarding the capacity of stakeholders and the regulatory framework have not been used and should be revised."

For example, a few interviewees told the FEV team that since there were less emissions reduction delivered during the initial phase documented in the MTR, EBRD has realized that there are technologies that provide more reductions/electricity per dollar of investment and adjusted their approach. Solar power projects were easier to implement technically and financially. However, biomass and biogas could provide higher installed capacity for the same amount of investment, compared to other types of renewable energy. Based on MTR, it was decided to focus more on the biomass and biogas.

As noted in Section 4.1.1.1, no baseline was established for capacity building and the approach anticipated for tracking capacity building was not implemented, which limits the ability to assess outcomes from capacity building activities. Though the MTR contained recommendations regarding this point, the FEV team found that no significant changes were made after the MTR. However, the

overwhelming majority of the formal capacity building activities of Component 2 were already completed by the MTR. Therefore, the ability to remedy this was already limited in the later stage of USELF. However, EBRD staff have mentioned they learned the lesson and have used capacity baseline approach in other projects/activities.

The FEV team notes that there have been significant staff changes over time within both the EBRD and USELF PIU teams and that the current staff have not been utilizing the results management framework regularly. However, as also noted in the MTR, the nature of the outputs and outcomes were only of limited relevance to support day-to-day management.

#### **4.2.3.1 Indications of adaptive management**

The implementation team's ability and willingness to engage in adaptive management, such as by tailoring the type of technical support provided, while remaining within overall project parameters should be viewed as a strength that contributed to project successes.

The MTR noted that " Adaptive management is generally being practiced by the project managers and consultants with the outcome that the project teams have been able to adjust to changing conditions to ensure that the project will likely have significant impacts ...Prioritisation of activities has very much been driven by the needs of the stakeholders – especially the NERC, project developers, and local communities, and by key issues that have arisen during interactions between project developers and the consultants under Component 3... During August 2011, the three consortia met in conference with EBRD for 2 days to discuss some of the specific issues facing project developers and how best to coordinate a response. The combination of ad-hoc and systematic information exchange has proven to be very effective and helpful for all involved. Information from project developers has assisted in relation to policy framework and SER development, and vice-versa."

The FEV team further notes that the overall implementation strategy remained consistent throughout, however the specific application processing and technical support provided by the PIU evolved somewhat over time to adapt to updated understanding of needs and requirements. The implementation team's ability and willingness to engage in adaptive management, such as by tailoring the type of technical support provided, while remaining within overall project parameters should be viewed as a strength that contributed to project successes. The FEV team found several instances where implementation issues were identified (e.g. level of technical support provided to developers, technical capabilities with renewable energy technology experts, the level of due diligence), and strategies subsequently were put in place to address them.

#### **4.2.4 Use of electronic information technologies**

This issue was already addressed in the MTR and the FEV team found no significant changes in the approach in the later phase. The USELF appeared to use an appropriate level of electronic information technologies to support implementation, participation and monitoring, such as the use of a website and templates provided in electronic format.

#### **4.2.5 Relationships between implementing institutions**

Overall, the relationships between EBRD and the subconsultants have been good and effective at delivering the program. As discussed above, since 2013 only the Fichtner - IMEPOWER consortia operating the PIU has been active and therefore is the focus of the FEV team's assessment.

The MTR reported “The partnership arrangements and level of stakeholder engagement can be considered as best practice....The management arrangements of the financial facility between the EBRD Bank staff – both in Ukraine and in London – and the consultants providing project development support appears to be effective and there are no outstanding issues that have been identified related to the facilitation of the financial investment facility. The delineation of responsibilities between the consultants and the Bank staff has been clear and the project developers have expressed that most interactions have been positive and helpful... The combination of ad-hoc and systematic information exchange [between EBRD and the three implementing consortia] has proven to be very effective and helpful for all involved.”

The FEV team found that there appeared to be high and efficient EBRD involvement during initial 3 years, as documented in the MTR. In the next 3 years USELF weathered some challenges as the program was transferred to a different department within EBRD, at the same time there were staff changes within the PIU, all of which coincided with some external challenges including instability within the Ukrainian Government and threats to the renewable energy strategy. The situation had improved significantly again by June 2017 with EBRD’s recommitment including new staff in early 2017, staff reprioritisation within the PIU and increased national stability.

During this time EBRD also expressed concerns with the level of due diligence being conducted as well as technical competencies of PIU staff, who adjusted their approach and reassigned staff to address (and resolve) the concern.

It appears that the USELF PIU benefited from the periods of time when there was dedicated program manager from the EBRD side. In other periods when EBRD’s management was focused on specific investment projects, there was less oversight of, and support for, the USELF PIU’s situation, regular tasks, and current challenges.

#### 4.2.6 Technical capacities of implementation team

Generally, the FEV team found that staff assigned at EBRD as well as the subcontractors for all three components appear to have demonstrated the appropriate technical expertise and management, as appropriate. Interviewees reported some issues in the middle phase at EBRD as well as within the PIU, all of which appear to have been remedied by mid-2017.

#### 4.2.7 Monitoring and evaluation (R)

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<b>S</b>	<b>Monitoring and evaluation</b>	Overall, the monitoring has been to some extent appropriate but insufficient. There was sufficient oversight, monitoring of subcontractor activities and tracking of impact metrics. However, there were weaknesses in the approach particularly relating to Component 2 addressing capacity building.
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The assessment of the monitoring and evaluation approach was extensively explored in the MTR, which found that “Overall, the monitoring has been to some extent appropriate but insufficient.” Within this document, it has been largely addressed within the discussion of the project results framework in Section 4.1.1.1. A few issues worth highlighting here are:

- Overall, the monitoring has involved the project consultants for each component delivering systematic monthly and quarterly monitoring reports as well as communicating consistently in

an ad-hoc manner with EBRD staff. This has mainly focused on the monitoring of the contract deliverables for the consortia.

- Component 1: The MTR had noted the “policy tracker document to examine progress on regulatory issues has been helpful, but could be improved. For example, it could have been structured to allow the history of each recommendation to be tracked from its origins (the discussions or studies that led to the recommendation being made) through to its final fate (its adoption, or otherwise).” However, there was no update to the policy tracker for the FEV team to assess activities after the MTR.
- Component 2: There does not appear to be a formal mechanism for monitoring the effectiveness of marketing activities and, as was noted above, there was a significant lack of monitoring related to capacity building both for policy-making/implementing bodies and for project developers, however, as the PIU shifted to customized support this deficiency appears to have only minor impact on implementation activities and project outcomes. The MTR team reported “According to the consultants implementing this component, the overall impacts of the training workshops will be assessed in the future – as the assignment is nearing completion. The consortium includes a training expert who is expected to conduct this assessment.” However, the FEV team was unable to uncover any evidence of this later assessment.
- Component 3: The monitoring of progress related to the finance facility has been appropriate and useful.

#### 4.2.8 Financial planning (R)

The discussion of our assessment of the financial planning for the project is divided into the following subsections:

- Financial management and accountability
- Cost-effectiveness of achievements
- Execution and implementation modalities
- Sustainability.

##### 4.2.8.1 Financial management and accountability

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<b>S</b>	<b>Financial management and accountability</b>	Financial management of the GEF project has been done according to the principles of sound financial management. The GEF funds are all disbursed, and all of the components of the project are in substantial compliance of the agreed targets. However, the challenging political conditions in the Ukraine and challenges with project staff resulted in some delays in the financial decision-making process.
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The financial management of the GEF-funded project “Creating Markets for Renewable Power in the Ukraine” has been done by EBRD in a structured manner and according to principles of sound financial management, and Project Implementation Reports (PIRs) have been submitted to GEF annually by EBRD since 2012/2013. The evaluation interviews, developer survey and review of project documentation did not uncover issues with financial planning, and the funding has been spent as intended, except for the agreed extensions of the end date of the GEF project from 2014 to 2017. According to the PIR for fiscal year (FY) 2016, the GEF financing is fully disbursed and the

implementation of all components of the GEF project are in substantial compliance with the original or revised implementation plan for the project.<sup>19</sup>

The MTR from 2013 reported that “Financial planning of the project is clear to senior USELF management and financial controllers in London and shall be shared with all of the appropriate EBRD in-country staff in Ukraine. Overall, no problems related to financial planning have been identified that have had a negative impact on the project implementation.”<sup>20</sup> The FEV team has identified the situation to still be similar at the end of the GEF project, based on interviews of EBRD and PIU staff.

Regarding the financial management of the Direct Lending Facility (Component 3b of the GEF project), the interviews revealed that there had been some delays in the lending decisions by EBRD especially in 2014-2016. As noted in previous subsections, the delays were partly due to the overall situation and political crisis in the Ukraine, and the political situation regarding the renewable energy feed-in-tariffs. In 2017, the situation in Ukraine has improved, and the delays in decision making in the Lending Facility have improved partly due to the staff changes in Fichtner and EBRD during 2017. Despite the reported delays, the project developers have been satisfied overall with the application processing and technical support received – in the participating developer survey all respondents gave a rating of either 4 or 5 of a maximum of 5 regarding these issues, though some did mention the process was slow.<sup>21</sup>

The loan disbursements to specific projects are reported in the Quarterly Progress Reports from the USELF PIU to EBRD. These are reported on a project by project basis and not in a summary table.

#### 4.2.8.2 Cost-effectiveness of achievements

<b>S</b>	<b>Cost-effectiveness of achievements</b>	Cost effectiveness of the GEF funding has been good, as it has been able to leverage even more co-financing than originally planned. The GEF financing has leveraged a substantial amount of other financing, with a leverage ratio of at least 17 USD of co-financing (including project owner's equity) compared to 1 USD of GEF investment. However, the outputs were somewhat lower than the targets set originally at the start of the project, increasing the cost per output.
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In accordance with the Project Identification Form (PIF)<sup>22</sup> of the project, GEF financing of was planned to be 8,450,000 USD and co-financing 81,800,000 USD. According to the Project Implementation

<sup>19</sup> EBRD Project Implementation Report for GEF for FY 2016 on the project Creating Markets for Renewable Power in Ukraine

<sup>20</sup> Landau, S., Househam, I. (2013). Mid-term Review of the EBRD-GEF project Creating Markets for Renewable Power in Ukraine

<sup>21</sup> Final evaluation Developer Survey results

<sup>22</sup> Project Identification Form of the GEF Trust Fund submitted 8 Nov 2007 and re-submitted 30 Nov 2007.

Report (PIR)<sup>23</sup> completed for FY2016 by EBRD, GEF financing was actualised as planned and co-financing was approximately 30% higher than planned, as presented in Table 7.

**Table 7. Planned and actual financing and co-financing, USD**

	Planned <sup>24</sup>	Actual <sup>25</sup>
<b>GEF Financing</b>	8,450,000	8,450,000
<b>Co-financing</b>	81,800,000	106,500,000

GEF financing and the leveraged co-financing are divided over the GEF project components as presented in

Project components	Expected and actualised outcomes	Planned financing (USD)		Actualised financing (USD)	
		GEF	Co-financing	GEF	Co-financing
1. Legislation, regulation & procedures	Policy barriers to grid-connected renewables removed	500,000	300,000	[EBRD to fill]	[EBRD to fill]
2. Commercial and market development	Business and information barriers reduced	1,700,000	700,000	[EBRD to fill]	[EBRD to fill]
3. Financial Facilitation	Renewable Energy investments facilitated in the Ukraine	6,000,000	80,000,000	[EBRD to fill]	[EBRD to fill]
4. Project management		250,000	800,000	[EBRD to fill]	[EBRD to fill]
<b>Total (USD)</b>		<b>8,450,000</b>	<b>81,800,000</b>	<b>8,450,000</b>	<b>106,500,000</b>
Project components	Expected and actualised outcomes	Planned financing (USD) <sup>26</sup>		Actualised financing (USD)	
		GEF	Co-financing	GEF	Co-financing

**Table 8. Division of planned and actualised financing between project component**

<sup>23</sup> EBRD (2017): GEF Project Implementation Reports: Ukraine – Creating Markets for Renewable Power in Ukraine for FY2016.

<sup>24</sup> Project Identification Form of the GEF Trust Fund submitted 8 Nov 2007 and re-submitted 30 Nov 2007.

<sup>25</sup> EBRD (2017): GEF Project Implementation Reports: Ukraine – Creating Markets for Renewable Power in Ukraine for FY2016.

<sup>26</sup> Project Identification Form of the GEF Trust Fund submitted 8 Nov 2007 and re-submitted 30 Nov 2007.

1. Legislation, regulation & procedures	Policy barriers to grid-connected renewables removed	500,000	300,000	[EBRD to fill]	[EBRD to fill]
2. Commercial and market development	Business and information barriers reduced	1,700,000	700,000	[EBRD to fill]	[EBRD to fill]
3. Financial Facilitation	Renewable Energy investments facilitated in the Ukraine	6,000,000	80,000,000	[EBRD to fill]	[EBRD to fill]
4. Project management		250,000	800,000	[EBRD to fill]	[EBRD to fill]
<b>Total (USD)</b>		<b>8,450,000</b>	<b>81,800,000</b>	<b>8,450,000</b>	<b>106,500,000</b>

I n a c c o r d a n c e

e with the PIF, the objective of the project was to address policy, finance, business, and information barriers to renewable energy market developments in Ukraine resulting in estimated direct emission reductions of 4 million tonnes of CO<sub>2eq</sub> over the investment lifetime from 80MW of additional installed capacity. Post-project indirect reductions were estimated to potentially reach 500 million tonnes of CO<sub>2eq</sub> over the next 20 years. The PIR for FY2016 compares project results to updated objectives and refers to the Project Result Framework<sup>27</sup> as the source of these objectives. These newer objectives are compared to project outputs in Table 9. **Error! Reference source not found.** presents the actual project cost of 8,450,000 USD by objectives and outputs.

**Table 9. Project objectives and outputs (source: PIR for FY2016)**

Indicator	Unit	Objective/target	Outputs
Total CO <sub>2eq</sub> emission reductions as a result of the use of renewable electricity (over 20-year lifetimes) by 2014	Mt	7	5.67
Total electricity generated from renewables annually by 2014	GWh/yr	370	249
Introduction of an enabling regulatory and incentive framework for RE based power		Introduction of an enabling regulatory and incentive framework for RE based power	Regulation in place, target achieved
Investment facilitated into renewable energy projects	M USD	150	144.8
New renewable power generation capacity installed	MW <sub>el</sub>	90	78.7

<sup>27</sup> Annex 1 of the Project's Request for COE Endorsement of "RCE")

**Table 10. Planned and actual project costs by objectives and outputs**

Indicator	Calculation method	Objective/planned	Outputs/actual
Total CO <sub>2</sub> <sub>eq</sub> emission reductions as a result of the use of renewable electricity (over 20-year lifetimes) by 2014 (M USD/Mt)	M USD/Mt	1.21	1.49
Total electricity generated from renewables annually by 2014	USD/GWh/yr	22838	33936
Investment facilitated into renewable energy projects	USD <sub>ALL</sub> /USD <sub>GEF</sub>	17.75	17.14
New renewable power generation capacity installed	USD/MW <sub>el</sub>	93889	107370

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#### n and implementation modalities

#### S Execution and implementation modalities

Effectiveness of selection of experts and consultants has been appropriate, and staff changes have been made when issues arise. Lead times not tracked consistently, but improved over time.

Effectiveness of EBRD and EBRD's counterpart in the selection, recruitment, assignment of experts, consultants and national counterpart staff members has been appropriate, and changes have been made in the consultant staff members by EBRD when issues have arisen in the project implementation. The project management staff in Fichtner was changed, in part due to identified issues in e.g. the Due Diligence process quality, and the new staff selection has been effective, as reported by interviewed EBRD and counterpart staff.<sup>28</sup>

The local consultant IMEPOWER has worked efficiently and appropriately during the course of the whole project, and the interviewees have all been largely satisfied with the local consultant's work, with a few exceptions that have already been addressed. The definition of tasks and responsibilities for the consultants and EBRD staff have been clarified during the course of the project, according to interviews of the assigned experts, consultants and national EBRD staff.<sup>29</sup>

The process indicators such as lead time in financing decisions has not been tracked consistently in course of the project. However, the quantity and quality of the inputs for the project have been appropriate with respect to execution responsibilities for most of the project duration, with the exception of the issues identified above in project implementation and structuring, regarding which appropriate staff changes have been made. The timeliness of inputs for the project have not been

<sup>28</sup> Interviews with EBRD and its counterpart staff

<sup>29</sup> Interviews with EBRD and its counterpart, Fichtner and IMEPOWER staff

tracked consistently by EBRD or consultant staff, but the evaluation interviews show that the timeliness of inputs has varied due to the political situation in the Ukraine, staff changes and other factors.<sup>30</sup> Currently the processes in both EBRD and the consultant teams are working efficiently and smoothly.

Based on the interviews, material and survey assessed in the evaluation, the FEV team does not see any negative issues in the enactment of necessary legislation and budgetary provisions in the EBRD regarding the GEF project. As there has not been any notable issues, these have not affected the implementation and sustainability of the GEF-funded project.

Regarding process indicators, as already noted in the MTR, some outputs such as development of the Renewable Energy Developers Manual<sup>31</sup> (which was published in June 2014), have been produced relatively late in the project, 4 years after the start of the project. Because of this, the earlier projects in the USELF pipeline have not been able to fully utilise the manual in their project development.

#### 4.2.8.4 Sustainability

##### **S Sustainability of project results after the project ends**

Overall, the project results provide a sustainable basis for renewable energy production in the Ukraine in the future, through changes in legislation and new feed-in-tariffs for renewable energy, which were supported by the project. Also, projects already financed by the Lending Facility are expected to continue after the project, generating sustainable results. However, there is a large additional pipeline of projects that are not yet financed, and the future and financing of this remaining pipeline is still uncertain as state and local banks gradually step-in as is the horizon for the feed-in tariffs after 2030.

The GEF project was designed to address policy, finance, business, and information barriers to renewable energy market developments in Ukraine<sup>32</sup> and produce more renewable energy through an innovative combination of dedicated regulatory assistance capacity building, commercial financing and concessional co-financing.<sup>33</sup>

The project succeeded to both help develop the sector and produce renewable energy projects. 78.7 MW of new renewable energy capacity was created between 2009-2017 in Ukraine, the target being

<sup>30</sup> EBRD staff acknowledged that there can be long delays in the project approval process, which is a bankwide issue, yet is exacerbated by developers inexperienced with the level and type of documentation needed. The USELF PIU helped increase the capacity of developers and helped to facilitate application processing, especially for repeat participants. Also, EBRD has developed a program to streamline processes and improve its timeline for review of projects.

<sup>31</sup> Ukraine Sustainable Energy Lending Facility (2014) Renewable Energy Developers' Manual [http://www.uself.com.ua/fileadmin/documents/USELF\\_EN\\_13\\_06\\_2014.pdf](http://www.uself.com.ua/fileadmin/documents/USELF_EN_13_06_2014.pdf)

<sup>32</sup> Project Identification Form of the GEF Trust Fund submitted 8 Nov 2007 and re-submitted 30 Nov 2007.

<sup>33</sup> Case study: USELF Ukraine Sustainable Energy Lending Facility, page 1

90 MW at the start of the project.<sup>34</sup> Despite the extreme difficulties that Ukraine faced during the project operation, as well as unrealistic assumptions in target setting, the target was nearly reached. During the time of instability within the country, the USELF managed to support projects in an environment where no-one else was financing renewable energy in Ukraine. Due diligence (DD) of projects was done with GEF funds.<sup>35</sup>

An EBRD staff member based in Ukraine describes the sectoral changes as follows, which are at least partly due to the GEF project results: “The conditions of the renewable energy market have substantially improved. Solar and wind generation are growing. EBRD is providing a substantial input to this growth; it is one of the largest investor in the RES sector. In addition to that, EBRD has invested substantial effort in building the capacity of the project developers.” In addition, he tells that local banks in Ukraine have also become active in RES financing.<sup>36</sup> Under the USELF, the project developers got the projected funding for their renewable energy projects and the target amount of USD 150 millions of project financing was nearly reached (USD 144.8 M).<sup>37</sup> More project applications have still continuously received and approximately one new project per month is accepted to the project portfolio.<sup>38</sup>

Another EBRD staff member commented “there are no more discussions whether RES is needed. USELF has helped to overcome misconceptions about renewables, in particular that RES is prohibitively expensive. The SER developed by USELF helped to provide reliable information about the environmental impacts from renewable energy. SER is used as a market tool by the business, while earlier developers only perceived environmental issues as an additional barrier to their work.... The state banks are now successfully competing with EBRD, e.g. Ukreximbank is believed to provide loans that are more attractive compared to EBRD terms. This is a positive achievement, since the goal of EBRD was to demonstrate the benefits of this niche market.”

When it comes to other dimensions of political development, EBRD has taken an active role in introducing the FiT (feed-in-tariff) legislation in Ukraine during the project. These initiatives and regulatory changes were done with the support of GEF funds, and these continue to exist even after the project ends. EBRD has recommended the government to both reduce the level of tariff for solar power, and include biogas into the support scheme. The Bank continuously works with the government to identify the necessary policy changes. One lesson learned is that the electricity market in Ukraine needs to be reformed, and there is pressure from the Energy Community towards this reform. EBRD participates in a working group with the Energy Community, developing the new RES support mechanism for the post-2030 period.<sup>39</sup>

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<sup>34</sup> Global Environmental Facility: Project Implementation Reports: Ukraine – Creating Markets for Renewable Power in Ukraine, GEF FY 2016, November 2017

<sup>35</sup> Interview of EBRD staff member, November 2017

<sup>36</sup> Interview of EBRD staff member, November 2017

<sup>37</sup> Global Environmental Facility: Project Implementation Reports: Ukraine – Creating Markets for Renewable Power in Ukraine, GEF FY 2016, November 2017

<sup>38</sup> Interview of EBRD staff member, November 2017

<sup>39</sup> Interview of EBRD staff member, November 2017

The USELF's CO<sub>2eq</sub> emission reduction targets were 7 million tonnes by 2014 and despite the fact that the first years of the programme were rather slow in building an actual project pipeline, the target has caught up relatively well during the USELF extension period and the longer-term environmental benefits will be satisfactorily reached (5.67 million tonnes over 20-year lifetime), taking into account the challenging political situation in the Ukraine during the project.<sup>40</sup>

As the Lending Facility ends, there is a significant project pipeline and important lessons learned on how to proceed with these projects. It would be important to find additional financing for the projects that cannot be financed through USELF, but have potential to be built. In addition, it is a major issue to make sure that the projects, that have been facilitated by the USELF PIU will continue after USELF technical and financial support ends.

Additionally, the GEF project did significant capacity building work during its first years and regulatory support was provided for the government. Also 11 workshops were organized on wind and small hydropower. Solar and wind power sectors are more standardized in Ukraine than biomass and biogas, and therefore it is more difficult to get this kind of financing for the latter project types.<sup>41</sup> In the future, to provide sustainability from the USELF lessons learned, these learnings should be taken into account when developing the renewable energy sector further in Ukraine.

#### 4.2.9 Level of GEF's visibility of their contribution to USELF

The FEV team found that the level of visibility of GEF's contribution to the USELF was appropriate. For example, the GEF logo with a notation that it was used to support Phase I is still on the USELF website, even though the GEF funding has been depleted. Also, the GEF logo also appeared prominently in marketing and educational materials produced with GEF support.

### 4.3 Results

Our discussion of the final results is divided into the following categories:

- Impact
- Effectiveness
- Efficiency
- Global environmental benefits
- Contribution to capacity development
- Sustainability
- Replication
- Synergies with other similar projects, funded by the government or other donors.

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<sup>40</sup> Global Environmental Facility: Project Implementation Reports: Ukraine – Creating Markets for Renewable Power in Ukraine, GEF FY 2016, November 2017

<sup>41</sup> Interview of EBRD staff member, November 2017

### 4.3.1 Impact

Through an innovative combination of regulatory assistance, capacity building, and project development support, the GEF project is substantially compliant at fulfilling its objectives to “to address policy, finance, business, and information barriers to renewable energy market developments in Ukraine resulting in estimated direct emission reductions of 7 million tonnes of CO<sub>2eq</sub> over the investment lifetime from 90MW of additional installed capacity.”

While the GEF did not finance any projects directly, it supported critical elements of developing a foundation for ongoing renewable energy development in Ukraine, by facilitating the development of the regulatory framework, raising awareness and building capacity and providing tailored technical assistance along with application processing.

These successes come despite the extreme difficulties that Ukraine faced during the project duration, as well as unrealistic assumptions in target setting. **Error! Reference source not found.** summarizes the outcome and impact results for the GEF project. The FEV team found no significant unforeseen positive or negative effects produced by the intervention.

**Table 10. Final results of the USELF impact and outcome indicators and targets.**

Rating	Indicator	Result to be achieved by project end	Final results through 3Q 2017	Reasoning for rating
S	Total CO <sub>2eq</sub> emission reductions as a result of the use of renewable electricity	7 million tonnes (over 20-year lifetimes) by 2014	5.67 million tonnes over 20-year lifetime	80% of the target was reached few years behind the schedule in an unstable national environment
HS	New renewable power generation capacity installed (Me <sub>ws</sub> )	Additional 90 Me <sub>ws</sub>	78.7 MW of new renewable energy capacity was created between 2009-2017	Project development was slower than planned, but primarily due to Ukraine's unstable situation, it was understandable and in those circumstances project development was highly satisfactory. USELF also supported projects in an environment where no-one else was financing renewable energy in Ukraine.
S	Total electricity generated from renewables (GWh/yrs.)	370 GWh/yr. by 2014	An estimated 249 GWh/yr is being generated by 3 <sup>rd</sup> Q 2017.	67% of the target has been reached in an unstable national environment. In addition the assumptions regarding the GWh/yr produced for the anticipated investments had been inadvertently overestimated, leading to an unrealistic target.

Rating	Indicator	Result to be achieved by project end	Final results through 3Q 2017	Reasoning for rating
S	Level of policy/regulation/strategy development	Introduction of an enabling regulatory and incentive framework for renewable energy-based power	The GEF project has improved the regulatory scheme related to renewable energy and encouraged banks to support the sector's development. GEF funds helped in reforming the FiTs and other regulatory components, which provided long-term sustainable changes in Ukraine's energy markets.	Improvement has been highly satisfactory, but it is not clear how the development will continue after the project and in long-term, as it is dependent on the political situation of the country.
HS	Establishment of financial facilities for renewable energy-based power	Investment facilitated into renewable energy projects – target US\$150 million	US\$144.8 million have been committed for renewable energy projects	The target has been substantially achieved.
HS	Capacity building	Capacity of NERC and wholesale electricity market to facilitate renewable energy investments increased; <sup>42</sup> capacity for project developers increased <sup>43</sup>	The capacity of NERC and the whole sale electricity market has substantially increased as has that of project developers.	There is a sizable and fluid pipeline that has seen a significant uptake in the past 6 months as the national environment has stabilized. Regulator and developer capacity are no longer the most significant barriers to project development, and improvement is ongoing.

#### 4.3.2 Effectiveness

The project has been effective at substantially achieving its objectives, benefiting from a no-cost project extension to 2017 that allowed the project an opportunity to recover from some significant setbacks and develop a healthy project pipeline.

Per the 2Q2017 PIR, since the commencement of USELF in October 2010, the program received 184 project applications for renewable energy projects, which went through the initial screening processes. Of those 184 projects currently 19 remain in the active project portfolio of the USELF 1+2 facilities.

<sup>42</sup> As shown in the Project Results Framework, targets for NERC and the wholesale electricity market were doubling capacity by year 3 and quadrupling capacity by end of project relative to start of project baseline. However, no baseline was established at the time and no specific scoring system was never implemented. Therefore this evaluation used more qualitative rubrics and backcasting to estimate capacity built.

<sup>43</sup> Specific targets for developers were to have capacity quadrupled by the end of project. As no baseline was established at the time and no specific scoring system was never implemented, this evaluation used more qualitative rubrics and backcasting to estimate capacity built.

The amount of signed loans is EUR81.39 million, financing a renewable capacity of 78.73 MW. Table 11 summarizes the portfolio and pipeline by loan stage through the 2<sup>nd</sup> quarter of 2017.

**Table 11. Summary of the USELF portfolio and pipeline (through June 2017).**

USELF 1 & 2 Facility	No	Capacity	CAPEX	EBRD loan	CTF loan	Total Debt	Equity
Project loans signed by EBRD	11	78,73	144,80	56,62	24,77	81,39	63,42
PAN Completed / SRM/FRM Pending	2	11,10	20,21	8,11	3,57	11,68	8,53
Projects with ongoing PAN preparation (DD)	2	18,32	40,45	16,18	8,09	24,27	16,18
Projects ready for DD (PSR submitted)	2	10,30	37,04	13,74	6,87	20,60	16,44
Projects with ongoing PSR preparation	2	43,34	49,85	19,94	9,97	29,91	19,94
<b>Active Facility Amount</b>	<b>19</b>	<b>161,79</b>	<b>292,35</b>	<b>114,58</b>	<b>53,27</b>	<b>167,85</b>	<b>124,50</b>
<b>Committed facility (mn EUR)</b>						<b>140</b>	
Excess volume						27,8	

Table 12 lists the projects with signed loan agreements is signed that are operational.

**Table 12. USELF financed projects that are operational (through June 2017).**

app No	Operation Name	Project Company / Borrower- Sponsor	Capacity (MWel)	Project Description	Total Project CAPEX (mn EUR)	Total Debt	Equity
003	Eco-Optima Wind	Eko-Optima LLC	13,20	Staryy Sambir-1 (phase1) 2x3.3 MW	20,50	13,30	7,20
064	Sunelectra Solar	Teplodar PIVi LLC	4,20	4.2 MW solar plant, Teplodar, Odessa region	9,30	5,40	3,90
071	Porogi Solar	Green Agro Service LLC	4,50	4.5 MW solar power plant, Porogi, Vinnitsa region	9,50	5,70	3,80
080	Ivankiv Biomass	Biogasenergo LLC	18,00	18 MW (6+12 MW) biomass plant, Ivankiv, Kiev region (waste wood)	25,90	15,50	10,40
086	Rokytno Biogas	Rokytno Sugar MII LLC	2,25	2.25 MW biogas plant, Rokytne, Kyiv region (mainly own sugar beet pulp)	11,82	7,09	4,73
087	Gnatkov Solar	Rengv Tomashpol LLC	5,00	5.0 MW solar power plant, Gnatkov, Vinnitsa region	9,00	5,40	3,60
008	Aquanova Hydro	Aquanova Development LLC	1,70	1.7 MW SHPP, Nyzhniy Bystryi, Zakarpattia region	5,49	3,30	2,20
102	Sharqorod Solar	Rengv Sharqorod	9	9 MW PV plant, Sharohod village, Vinnitsa region	10,60	6,90	3,70
039	Hydropower Small Hydro	Hydropower LLC	0,93	Development of a 0.93 MW SHPP at Svarchiv; Project substitutes a cascade of two SHPP (0.48/1.19 MW) Bily Cheremosh River	3,29	2,00	1,29
	<b>Total</b>		<b>56,53</b>		<b>105,40</b>	<b>64,59</b>	<b>40,82</b>

Table 13 summarizes the results for the output indicators from the results framework.

**Table 13. Summary of results of output indicators.**

Rating	Indicator	Result to be achieved by project end	Final Results
HS	Component 1: Legislation, regulation & procedures:	<p>A favourable environment for renewable energy created including:</p> <ul style="list-style-type: none"> <li>* RES law revised by Verkhovna Rada to remove deviations from good international practice</li> <li>* Feed-in tariff methodologies and procedures approved by NERC and effective</li> <li>* Detailed technical and operational procedures for assessment and approval of renewable energy projects by distribution companies adopted and effective</li> <li>* Streamlined procedures for permitting of renewable energy projects adopted</li> </ul> <p>Capacity of NERC and WEM to facilitate renewable energy investments</p> <p>– target: x2 by year 3; x4 by end of project against start of project baseline</p> <p>Strategic Environmental Reviews (SER)s completed and approved by authorities covering key regions with RES potential</p>	<p>A significantly more favorable environment for renewable energy has been created:</p> <ul style="list-style-type: none"> <li>- RES law has been revised</li> <li>- Feed-in tariff methodologies and procedures have been approved by NERC and are largely effective</li> <li>- Procedures of distribution companies significantly improved</li> <li>- Procedures for permitting of renewable energy projects have been adopted</li> <li>- Capacity of NERC and WEM to facilitate renewable energy investments has been substantially increased</li> <li>- A quantitative baseline for capacity was never developed. However, EBRD has incorporated this concept into other projects based upon MTR feedback</li> <li>- The SER is complete and approved.</li> </ul>
HS	Component 2: Commercial and market development	<p>Average “renewable energy capacity score” – target x4 by end of project</p> <p>Targeted information available to investors</p> <p>Number of firms reached through marketing for investments in renewable energy projects: Target 20</p>	<p>The capacity of investors and project developers has been substantially increased. However, no quantitative baseline was ever established.</p> <p>The materials from the training workshops is freely available from the project website, and the USELF PIU has conducted personal meetings with investors as requested.</p> <p>The number of firms reached through marketing is over 100</p>
HS	Component 3: Financial	<p>At least 10 projects financed and connected to the grid</p>	<p>11 projects financed, 7 connected to the grid, 4 under construction</p>

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facilitation	<p>At least 75% of projects financed on limited recourse basis</p> <p>Commercial finance attracted to cover at least 20% of the total borrowing under the facility</p> <p>Commercial success of the projects and undisturbed repayment of loans</p>	<p>100% of projects financed on limited recourse basis (target surpassed)</p> <p>Commercially sourced private equity from project developers covers 43.8 % of the total CAPEX cost of the 11 projects financed.</p> <p>Other commercial finance to cover lending under the facility has not been received, except for NEFCO and IFU from the Nordic countries joining EBRD in the Karpatskyi Wind project's loan agreement.</p> <p>Despite the economic crisis in the Ukraine and local currency devaluation, repayment of has been undisturbed so far except for one loan, where the project is in corporate recovery process.</p>
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### 4.3.3 Efficiency

The GEF financing has leveraged a substantial amount of other financing, with a leverage ratio of at least 17 USD of co-financing (including project owner's equity) compared to 1 USD of GEF investment. However, the outputs were somewhat lower than the targets set originally at the start of the project, increasing the cost per output.

The GEF project was reasonably efficient in that GEF financing was actualised as planned and co-financing was approximately 30% higher than planned. The GEF project received a no-cost extension with additional support for project development (Component 3a) provided by other donors once the GEF funding was depleted. Components 1 and 2 were completed entirely with GEF support.

Rating	Objectively verifiable indicators / targets	Progress to date / reasoning for rating
HS	At least 10 projects financed and connected to the grid	11 projects financed, 7 connected to the grid, 4 under construction
HS	At least 75% of projects financed on limited recourse basis	100% of projects financed on limited recourse basis (target surpassed)
S	Commercial finance attracted to cover at least 20% of the total borrowing under the facility	Commercially sourced private equity from project developers covers 43.8 % of the total CAPEX cost of the 11 projects financed.  Other commercial finance to cover lending under the facility has not been received, except for NEFCO and IFU from the Nordic countries joining EBRD in the Karpatskyi Wind project's loan agreement.
S	Commercial success of the projects and undisturbed repayment of loans	Despite the economic crisis in the Ukraine and local currency devaluation, repayment of has been undisturbed so far except for one loan, where the project is in corporate recovery process.

### 4.3.4 Global environmental benefits

The GEF project has contributed to achievement of a GHG emissions reduction of 5.67 million tonnes over 20-year lifetime from an estimated 249 GWh/yr from 78.7 MW of new renewable energy capacity created between 2009-2017. A healthy pipeline of additional projects has also been built, which should ultimately lead to additional environmental benefits.<sup>44</sup>

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<sup>44</sup> The FEV team received insufficient information to fully review the methodology for calculating emission reductions and validate the direct emission reductions resulting from the project. However, as the capacity built and GWh produced are well documented within EBRD as well as the Ukrainian Government the FEV team has no reason to believe the reported figures are inaccurate.

#### 4.3.5 Contribution to capacity development

As is discussed in other sections, the project had a significant and multi-pronged approach to capacity development for all key market actors, including regulators, developers and investors and substantially achieved its objectives. As noted above, the regulatory framework has been updated and the projects are regularly being approved by the relevant national and local authorities and built and there is now a healthy pipeline of projects. Other banks in Ukraine are starting to offer loans, or loans with more favourable terms, for renewable energy projects.

#### 4.3.6 Sustainability

As noted in Section 4.2.8.4 above, the project results provide a sustainable basis for renewable energy production in the Ukraine in the future, through changes in legislation and new feed-in-tariffs for renewable energy, which were supported by the project. Also, projects already financed by the Lending Facility are expected to continue after the project, generating sustainable results

The project succeeded to both help develop the sector and produce renewable energy projects that will continue to provide emission reductions in the years to come.

An EBRD staff member based in Ukraine describes the sectoral changes as follows, which are at least partly due to the GEF project results: "The conditions of the renewable energy market have substantially improved. Solar and wind generation are growing. EBRD is providing a substantial input to this growth; it is one of the largest investor in the RES sector. In addition to that, EBRD has invested substantial effort in building the capacity of the project developers." In addition, he tells that local banks in Ukraine have also become active in RES financing.

As the Lending Facility ends, there is a significant project pipeline. However, it is not clear how the potential new projects will get money and how the lessons learned will be transferred to other parties who could continue the development of Ukraine's renewable energy sector after the USELF operation ends.

More banks are now willing to provide financing for renewable energy projects, however the while the Government continues to demonstrate its support, though the horizon after 2030 for the feed-in tariff is still unclear.

#### 4.3.7 Replication

As addressed in Section 4.1.4, there are multiple ways the lessons and experiences of the USELF have helped to stimulate similar activities, both in terms of scaling up as well as replicating (portions of) the concept. The FEV team found three types of evidence relating to scale up and replication:

- **Extension of USELF:** EBRD secured support from other donors to provide project financing and to continue to fund the PIU activities originally funded by the GEF project. This builds directly on the GEF funded activities and helped to capture and sustain the momentum generated in the first Phase. The example set by the USELF as well as changing market conditions has also meant that other state and local banks became now active in the RES sector in Ukraine. However, USELF has continued to be the main source of technical assistance in the RES sector for the government. EBRD is currently considering expanding the USELF concept in Ukraine to also include larger scale projects.

- **Stimulating other support for renewable energy:** The approach of USELF is replicated by other players. For example, Ukrgasbank is working in cooperation with IFC to provide project financing. Raiffeisen bank has contracted an external consultant to evaluate biomass/biogas projects, which is similar to the approach used by USELF.
- **Replication of approach in a new area:** One interviewee reported that the Ukraine Public Sector Energy Efficiency Framework (UPSEEF) program launched by the EBRD in Ukraine can be considered as partial replication of USELF experience, but in the area of energy efficiency of public buildings.<sup>45</sup>

#### 4.3.8 Synergies with other similar projects, funded by the government or other donors

The project was designed to build on World Bank supported work during 2007-08, which focused on developing the legal framework for the Wholesale Electricity Market.

The USELF PIU and EBRD staff were active in coordinating with other related initiatives, including UKEEP and IFC initiatives, especially in Phase I. The USELF PIU and EBRD staff have also taken advantage of synergies by attending and speaking at events, holding one-on-one meetings, and inviting other stakeholders to workshops and events held by USELF/EBRD.

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<sup>45</sup> Initiated in April 2017, the EBRD's UPSEEF program is designed to support development of the energy performance contract (EnPC) market in Ukraine by testing and establishing the recently improved legislative framework for EnPC by implementing financing framework for energy efficiency in public buildings. The Framework aims to provide development support and debt finance to EnPC projects which meet required commercial, technical and environmental standards.

## 5. Recommendations

The following recommendations are designed to be forward looking and point out good practices to support other initiatives seeking to benefit from the learning on the USELF's experiences. They are drawn from both the strengths and weaknesses of the USELF as implemented.

- 1. Design a multi-component approach tailored to local circumstances to provide a foundation for success.** The three-component approach with different consortia with specialised expertise, stakeholder engagement profiles, and timelines worked well to address the complexity of the work needed. There are a variety of complex barriers that must be addressed to facilitate a market for renewable energy, projects still may not move forward if only some of these are addressed. Management processes should include regular coordination between consortia to avoid duplication or gaps as well as to maximize synergies.
- 2. Design results framework using practical and meaningful indicators relevant for the implementation team as well as funders.** Consider how the indicators are to be tracked in practice, especially for outputs and outcomes. As part of the outputs, seek to include leading indicators that will point toward the outcomes (and impacts) to increase relevance for the implementation team. Avoid overreliance on quantitative indicators that are seen as easy to track, yet do not provide especially meaningful information. Review assumptions for linked indicators, such as regarding how investments will translate into final impacts (e.g. renewable capacity, annual generation, and GHG emission reductions) and the sensitivity to different mixes of renewable energy types.
- 3. Build in comprehensive and ongoing engagement of the range of stakeholders.** It is also important to proactively tailor both the engagement strategy and deliverables to meet the needs of the variety of stakeholders.
- 4. Allow sufficient time for implementation of all components to optimize cost effectiveness.** The development of the regulatory framework and initial awareness raising and general capacity building were completed within 4 years, however it took a few more years for that to translate to a sufficient and healthy pipeline of viable projects.
- 5. Adaptive management is a necessity.** Within the core framework, it is inevitable that adjustments will be needed along the way to adapt to changing external circumstances and evolving stakeholder needs. The implementation structure should allow sufficient flexibility for the implementation team as well as periodic review points to facilitate the necessary evolution, such as in the nature of the technical assistance provided to regulators and project developers.
- 6. Consider a regular engagement strategy with overlapping and synergistic initiatives.** To be effective, this needs to be built into the implementation structure including the results framework or will risk being deprioritized or forgotten.
- 7. Make decisions on renewal 4-6 months in advance of break point to avoid loss of momentum.** This will help minimize inefficiency in implementation as well as avoiding undue impact on developers. Plan to evolve the approach rather than completely end the program. This will more fully leverage learning and stakeholder contacts developed.

8. **Ensure there are mechanisms to preserve institutional memory in the midst of inevitable staff changes.** Core team members at both EBRD and the USELF PIU changed at a similar time and coincided with a loss of momentum (also due to external factors). It is possible that important institutional memory and documents may not have been transferred to the new responsible parties., which impacted the FEV team's ability to conduct a comprehensive review. To help mitigate these situations, additional mechanisms to preserve institutional memory and stakeholder relations are useful. It is also important to maintain appropriate turnaround times for application processing to facilitate developer trust.

## 6. Lessons learned

Overall, the USELF should be viewed as a success story, with the GEF support coming at just the right time to help transform the market. A FiT designed and put forward by the GEF-supported technical assistance had been approved, but there was insufficient knowledge and capacity within the government as well as with local developers to take full advantage of it. In addition, the packaging of GEF funded capacity building and technical assistance along with significant financial facilitation funded by other donors resulted in a critical mass of activity to significantly transform the market. The USELF's direct interaction with developers, and the ability to make quick and efficient review and due diligence of projects and, from other side, to advise developers what can be improved was a significant asset and the current phase of USELF ends with a healthy pipeline of viable projects. There is still a lack of experience in funding projects in the construction phase by other funders (e.g. state and local banks), but situation is improving.

This section summarizes key lessons learned throughout implementation of the USELF.

- A. The Theory of Change was valid: the multi-component approach taken by USELF has been successful overall.** The original design and project strategy is generally consistent with the needs of all stakeholders. Overall, the project implementation approach and management arrangements for this project have been effective to date. Project impacts have been significant on the legislative/ regulatory framework and the overall market for renewable energy in Ukraine due to the EBRD/ GEF involvement, and will continue. The prospects for sustainability regarding project are strong, but not guaranteed due to uncertainties in the long term political support for renewable energy in Ukraine.
- B. Developing a market and identifying viable/bankable projects is possible but takes time and support.** The program harnessed significant interest that was building in Ukraine and helped to build momentum, but the process took longer than anticipated due to a variety of internal and external factors. While the concept was sound, initial assumptions regarding the speed of uptake were somewhat overoptimistic for the situation in Ukraine.
- C. The mix of technical skillsets of the consortia hired to support the different components was valuable and appropriate.** The components required specialized skillsets and also allowed activities to move forward simultaneously on multiple fronts. For ongoing implementation, the PIU needs access to experience with all technologies, as well as with legal and financial and Environmental, Social and Governance (ESG) components. Fichtner and IMEPOWER's mix of part time staff with different specialties appears to have worked well. In addition to general awareness raising trainings, developers needed tailored support with guidance as specific as possible to their project needs.
- D. The USELF's willingness to adapt to stakeholder feedback and external conditions contributed to its successes.** Adaptive management is generally being practiced by the project managers and consultants. For programs like this it is important to be flexible in implementation, while remaining within the overall framework to adapt to changing conditions, new understandings and evolving stakeholder needs. For example, the combination of ad-hoc and systematic information exchange has proven to be very effective and helpful for all involved. The technical support provided by the PIU evolved somewhat over time to adapt to updated.

- E. The USELF was able to recover from a period of internal and external instability.** However, no-cost extensions allowed the USELF to weather a difficult period to ultimately deliver successfully on its objectives and develop a significant pipeline should additional financing become available. During a middle phase the USELF experienced external challenges due to political instability at the same time that staff was changing at both EBRD and within the PIU.
- *Political instability.* It is very difficult for projects to move forward in an unstable political environment. Even when all barriers within the program's sphere of influence have been addressed, projects may still struggle. Similarly, local governments may create problems or delays despite national priorities.
  - *Extensive staff changes,* particularly occurring simultaneously can reduce momentum and reduce efficiency due, in part, to loss of institutional memory.
- F. The USELF PIU has accumulated a unique and valuable perspective on most renewable energy projects in Ukraine.** They have screened more than 180 projects, and conducted due diligence for over 30, in addition to the loan agreements that have been signed. This gives them unusual insight into both the bad and good practices and therefore quickly provide meaningful feedback to developers, investors, banks whether any particular project can be implemented and/or what changes would be needed for it to become viable.
- G. The electricity market in Ukraine needs to be reformed;** and there is pressure from the Energy Community towards this reform. EBRD participates in a working group with the Energy Community, developing the new RES support mechanism for the post-2030 period.

*There are also some valuable lessons from the first phase that were captured in the MTR that are still relevant and worth carrying forward:*

- H. In a project with a number of consultancy organisations involved, it is important to have coordinated interaction.** The project's approach to coordination of consultancy organisations has been identified as a key strength. This interaction should start very soon after contracts are signed between the different organisations. This interaction should be sustained throughout the project in a formalised, organised way by the project manager.
- I. A key success factor for the project in attracting interest to the financial facility and having a broad impact has been ensuring representation of the facility at various forums and significant outreach to potential investors.** In a project developing an investment facility that is based upon increasing deal flow, it is critically important that representatives of the investment facility (either the PIU or EBRD) become involved in and represent the project in various forums in order to attract interest in the finance facility from amongst potential project developers/clients.
- J. In estimating costs for investment and associated GHG reductions the full project investment costs (including VAT cash flows) should be considered.** It appears that for this project the calculations did not take into account at least some of these factors, leading to an over-estimation of expected GHG reductions and MW installed due to investments. A more detailed financial and market analysis of likely types of projects to be developed could also be helpful to estimate Internal Rates of Return for different technologies based on given Green tariffs, and likely investment and Operations and Maintenance costs.

- K. Measurements of changes in capacity are challenging to define and track, but this must be dealt with explicitly at project inception and throughout project implementation.** In this project, these issues do not appear to have been dealt with explicitly at the outset, making monitoring and evaluation of capacity changes more challenging because they must happen after the fact. These issues need to be made clear in the ToR of consultancy firms involved in projects that include capacity building. If necessary, it may require briefing and support by EBRD if the consultancy firms are to effectively implement sophisticated monitoring approaches in a way that is consistent across different projects.

## 7. Annexes

This report contains the following annexes:

- A. Evaluation ToR
- B. Itinerary
- C. List of persons interviewed
- D. Summary of field visits
- E. List of documents reviewed
- F. Questionnaire used and summary of results
- G. Comments by stakeholders

## 7.1 Annex A: Evaluation ToR

### CREATING MARKETS FOR RENEWABLE POWER IN UKRAINE

#### TERMS OF REFERENCE FOR THE EBRD-GEF FINAL EVALUATION

**Project title:** Creating Markets for Renewable Power in Ukraine

**Objectives of the consulting services:**

The objective of the consulting services is to perform a final evaluation of the project Creating Markets for Renewable Power in Ukraine, as required by the GEF Monitoring and Evaluation Policy (Section 3), and consistent with relevant evaluation principles as set out in the EBRD Evaluation Policy and the GEF Monitoring and Evaluation Plan for the project (Section 4).

**Location:** The work will include a site visit to Ukraine and the required deskwork before and after the visit.

**Consultant:** The review team will consist of two consultants. The evaluator must be independent from both the policy-making process, and the delivery and management of assistance that were part of the project to be evaluated. Therefore, applications will not be considered from the consultants who have had any direct involvement with the design or implementation of the project. This may apply equally to consultants who are associated with organizations, universities or entities that are, or have been, involved in the process and/or delivery of the project. Any previous association with such entities must be disclosed in the application.

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## Background

### The EBRD-GEF “Creating Markets for Renewable Power in Ukraine” Project

Ukraine relies heavily on imported fuel (up to 80% of primary energy needs during peak demand) and its own generating assets are ageing and highly polluting. The need to improve energy security and reduce the environmental impact of its energy sector is acute. Renewable energy can play a key role in addressing both these issues. Ukraine has great potential, yet these resources have hardly been used so far: the technical potential for wind energy is estimated at 40 TWh/year, small hydro - 8.3 TWh/year, biomass - 120 TWh/year, and solar energy - 50 TWh/year, yet current production of renewable energy is only 0.5 TWh/year. The main reason for this low level of activity is that until now the legislative and regulatory frameworks have not been adequate to allow the implementation of the numerous potentially feasible projects in this area.

To assist in addressing these issues and helping Ukraine to realise its renewable energy potential the European Bank for Reconstruction and Development (“EBRD” or the “Bank”) launched the Ukraine Renewable Energy Direct Lending Facility (UREDLF, later renamed to Ukraine Sustainable Energy Lending Facility, USELF or the Facility). USELF provided development support and debt finance to renewable energy projects that meet required commercial, technical and environmental standards. The Facility raised €50 million for financing projects.

The Facility benefited from a grant of \$8.45 million from the Global Environment Facility (GEF) for technical assistance and investment. A detailed description of the Facility and related financing arrangements is publicly available on the GEF website<sup>46</sup>, with the GEF Request for CEO Endorsement also available online<sup>47</sup>.

This project gained GEF CEO Endorsement in 2010 and officially began implementation on March 2010. Following an agreed extension, this project is expected to be financially closed on 31/3/2017. A mid-term review (MTR) of the project was carried out covering the project’s implementation from inception in March 2010 through to the beginning of October 2012 (approximately 2.5 years of operation), with the MTR field visit conducted the week of 1 October 2012. Overall, the project appeared to be well on track to being successful in creating the market for renewable power in Ukraine.

### GEF Project overall objective

The GEF Project objective was:

“to address policy, finance, business, and information barriers to renewable energy market developments in Ukraine resulting in estimated direct emission reductions of 7 million tonnes

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<sup>46</sup> Ukraine GEF project documentation may be downloaded from: [http://www.thegef.org/gef/sites/thegef.org/files/gef\\_prj\\_docs/GEFProjectDocuments/Climate%20Change/Ukraine%20-%20%283535%29%20-%20Creating%20Markets%20for%20Renewable%20Power%20in%20Ukraine/02-2010%20ID3535%20Project%20document.pdf](http://www.thegef.org/gef/sites/thegef.org/files/gef_prj_docs/GEFProjectDocuments/Climate%20Change/Ukraine%20-%20%283535%29%20-%20Creating%20Markets%20for%20Renewable%20Power%20in%20Ukraine/02-2010%20ID3535%20Project%20document.pdf)

<sup>47</sup> GEF Request for CEO endorsement may be downloaded from: <http://www.thegef.org/gef/sites/thegef.org/files/documents/document/02-23-2010%20ID3535-UkraineCouncilLetter.pdf>

of CO<sub>2eq</sub> over the investment lifetime from 90MW of additional installed capacity.”

The focus of the project was on kick-starting the market through establishment of a dedicated Renewable Energy Direct Lending Facility (Component 3). The facility was a source of loans to project developers on a limited recourse basis, and was supported by Technical Assistance throughout the supply chain to develop a flow of bankable projects. Technical assistance and information provision was also provided at a commercial and market level (Component 2) to address market-wide barriers such as capacity and awareness systematically. Policy support (Component 1) targeted the legislative, regulatory and procedural basis to allow and encourage renewable power to be developed successfully in Ukraine.

Component 1 Legislation, regulation & procedures		Component 2 Commercial & market development		Component 3 Financial facilitation	
Institution building	Environmental procedures & due diligence	Training & capacity building	Awareness & marketing	Project Preparation Support	Direct Lending Facility

## EBRD Evaluation Policy

### EBRD’s purpose of evaluation

The EBRD’s **Evaluation Policy** (board approved 16 January 2013)<sup>48</sup> establishes the scope and objectives served by evaluation in the EBRD. “It sets out the evaluation-related activities and responsibilities of the EBRD Evaluation Department (EvD), EBRD Management, and the EBRD Board of Directors (the Board) and any subordinate bodies designated by the Board. It sets out the principles guiding evaluation at the EBRD and the specific internal roles and responsibilities required to accomplish effective evaluation; it also provides the essential framework for procedures and methods within which the Policy will be executed; and, it specifically covers response by Management to evaluation findings, access to information, utilisation of findings, internal circulation and external disclosure.”

The EBRD considers performance assessment for accountability is at the heart of evaluation. Evaluation plays a critical role in this by contributing in two equally-important and mutually-reinforcing ways: by reinforcing institutional accountability for the achievement of results; and, by providing objective analysis and relevant findings to inform operational choices and to improve performance over time. The selected consultant should be familiar with EBRD’s Evaluation Policy which may be downloaded at: [www.ebrd.com/downloads/about/evaluation/1003.pdf](http://www.ebrd.com/downloads/about/evaluation/1003.pdf).

### GEF M&E Policy and objective of the GEF Project Final Evaluation

#### GEF M&E Policy

The “**GEF Monitoring and Evaluation Policy**”<sup>49</sup> (2010) states the minimum M&E requirements that should be applied at the project and program levels. An evaluation at the end of a project intervention

<sup>48</sup> The EBRD’s Evaluation Policy can be downloaded at: [www.ebrd.com/downloads/about/evaluation/1003.pdf](http://www.ebrd.com/downloads/about/evaluation/1003.pdf)

<sup>49</sup> [http://www.thegef.org/gef/sites/thegef.org/files/documents/ME\\_Policy\\_2010.pdf](http://www.thegef.org/gef/sites/thegef.org/files/documents/ME_Policy_2010.pdf)

(terminal evaluation or final evaluation – FEV) is one of the minimum M&E requirements at the GEF project level. The FEV at the project level includes mainly: implementation processes, including the tracking of activities and financial resources, the delivery of outputs, and progress toward outcomes.

Project evaluations should serve to provide lessons learned and recommendations for future projects, programs, policies, or portfolios<sup>50</sup>. GEF Agencies are expected to apply their internal arrangements to the conduct of evaluations to ensure that evaluation reports of GEF projects and programs are “credible, unbiased, consistent, and well documented in line with the above requirements”. Each evaluation will assess results (outputs, outcomes, and impact) according to the criteria of relevance, effectiveness, efficiency (cost-effectiveness), and sustainability, as applicable. Additional minimum requirements of project evaluations are provided in Box 1 below.

1 The FEV report will be submitted to the GEF as part of the annual reporting function during the FY2017 reporting cycle (deadline December 2017). The GEF operational focal point (OFP) for Ukraine shall be fully informed and receive this FEV report upon completion.

### **GEF Guidelines for Conducting Terminal Evaluations**

The GEF Evaluation Office also provides “**Guidelines for Conducting Terminal Evaluations**”<sup>51</sup> (2008), as discussed in detail in this section. As noted in these Guidelines, FEVs have the following complementary purposes:

- a. To promote accountability and transparency, and to assess and disclose levels of project accomplishment;
- b. To synthesize lessons that may help improve the selection, design and implementation of future GEF activities;
- c. To provide feedback on issues that are recurrent across the portfolio and need attention, and on improvements regarding previously identified issues;
- d. To contribute to the GEF Evaluation Office databases for aggregation, analysis, and reporting on the effectiveness of GEF operations in achieving global environmental benefits and on the quality of M&E across the GEF system.

2 In conducting terminal evaluations of GEF-supported projects, the **GEF Agencies should apply these GEF guidelines as well as their own evaluation norms and standards.**

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<sup>50</sup> GEF M&E Policy (2010), para 87, page 30.

<sup>51</sup> [www.thegef.org/gef/node/1905](http://www.thegef.org/gef/node/1905)

**Box 1. GEF's minimum requirements for project and program evaluation**  
(*GEF M&E Policy, 2010, page 31*)**Minimum Requirement 3: Project and Program Evaluation**

Each full-size project and all programs will be evaluated at the end of implementation. This evaluation will have the following minimum requirements:

- The evaluation will be undertaken independent of project management, or if undertaken by project management, will be reviewed by the evaluation unit of the GEF Agency or by independent quality assurance mechanisms of the Agency.
- The evaluation will apply the norms and standards of the Agency concerned.
- The evaluation will assess at a minimum:
  - achievement of outputs and outcomes, and provide ratings for targeted objectives and outcomes;
  - likelihood of sustainability of outcomes at project or program termination, and provide a rating for this; and
  - whether Minimum Requirements 1 and 2 were met, and provide a rating for this.
- The report of this evaluation will contain at a minimum:
  - basic data on the evaluation:
    - when the evaluation took place,
    - who was involved,
    - the key questions, and
    - the methodology—including application of the five evaluation criteria;
  - basic data of the project or program, including actual GEF and other expenditures;
  - lessons of broader applicability; and
  - the terms of reference of the evaluation (in an appendix).
- The report of the evaluation will be sent to the GEF Evaluation Office immediately when ready, and at the latest, within 12 months of completion of project or program implementation.

3

According to the GEF's Guidelines (para 8), the independent evaluation units of the GEF Agencies are encouraged to facilitate the terminal evaluation process for GEF projects in a manner that ensures independence and objectivity. For example, the GEF Evaluation Office encourages the units to review and validate terminal evaluation reports to ensure compliance with GEF and GEF Agency evaluation requirements.

**GEF Project M & E plan for Ukraine**

4 The GEF "Request for CEO Endorsement" for this Project outlined a Monitoring and Evaluation (M&E) approach intended to support the sound planning and adaptive management of the project as well as to facilitate reporting of progress and impacts to the GEF secretariat. End of project indicators and targets included in the initial M&E plan were:

- GHG emission reductions (CO<sub>2eq</sub>) (target: 7 million tonnes as a direct result of this project over a 20-year investment lifetime)<sup>52</sup>;
- Strengthening of the enabling regulatory and incentive framework for renewable based power;
- Investment facilitated in renewable energy projects (target USD 150 million);
- New renewable power generation capacity installed (MW<sub>el</sub>) (target: 90 MW<sub>el</sub>);
- Total amount of electricity additionally generated (GWh) from new renewable energy installations (target: 370 GWh / year by end of project).

The GEF “project results framework” - including expected impact, outcomes and outputs - is provided in Annex 1.

The Bank now seek to engage a consultant (the “consultant”) to implement an evaluation of the ULSEF in line with the GEF (the “Assignment” or the “evaluation”)

### **Scope of Evaluation Work**

#### **FEV approach**

This evaluation is to be undertaken taking into consideration the GEF Monitoring and Evaluation Policy<sup>53</sup> and the EBRD Evaluation Policy<sup>54</sup>. The evaluation must provide evidence-based information that is credible, reliable and useful. It must be easily understood by project partners and applicable to the remaining period of project duration. The consultant is expected to take into account all relevant changes in the project environment since the project was designed and began in 2010.

The consultant is expected to follow a participatory and consultative approach ensuring close engagement with the government counterparts, the project team and key stakeholders. An outline of an evaluation approach is provided below; however the independent consultant selected will be responsible for revising the approach as necessary. Any changes should be in-line with professional norms and standards. They must be also cleared by the EBRD before being applied by the evaluator. EBRD anticipates the consultant will embrace a Theory of Change based approach to assist in understanding Project outcomes and contributions to impacts. Should the consultant decide a different approach is more appropriate to this evaluation, this must be also cleared by the EBRD before being applied by the evaluator.

The approach to be used by the evaluation team should be presented in the report in detail. It shall include information on:

- Documentation review (desk study), including the list of documentation reviewed;
- Interviews held;
- Questionnaires;
- Field visits;
- Participatory techniques and other approaches for gathering and analysis of data.

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<sup>52</sup> See Incremental Cost Analysis in Annex G of Request for CEO Endorsement for details on how this has been determined.

<sup>53</sup> See <http://www.thegef.org/gef/sites/thegef.org/files/documents/GEFMonitoringEvaluationPolicy.pdf>

<sup>54</sup> See <http://www.undp.org/gef/documents/me/ME-HandBook.pdf>

This evaluation should also provide ratings of Project achievements according to GEF Project Review Criteria. Achievements in meeting the Development Objective and Implementation Objectives, in addition to a descriptive assessment, should be rated using the following divisions used by the GEF:

HS	Highly Satisfactory
S	Satisfactory
MS	Marginally Satisfactory
MU	Marginally Unsatisfactory
U	Unsatisfactory

The Evaluator should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

### Proposed FEV work programme and deliverables

Based on the above approach, during the scoping stage the FEV consultants will propose the methodology for conducting the FEV based on existing data and information. While the review methodology will be detailed prior to initiation of the actual review and planned site visits, it should be made clear that the evaluators are responsible for revising the methodology as necessary. Any changes should be cleared with the EBRD before being applied by the FEV team.

The FEV will be conducted between August – November 2017. The tentative workplan will be recommended by the FEV consultants for review, comment and approval by the EBRD. For this FEV, the following approach is suggested, with the proposed deliverables and tentative timelines as noted:

### FEV Planning

The FEV consulting team will initially meet with EBRD project managers/staff via teleconference. The intent is to fully orient the FEV consulting team, identify any existing documentation available, and to identify any additional information the team will require. Based upon the review of existing documentation, the FEV consulting team will then prepare a planning report that will include the detailed FEV methodology, including development of the set of questions (although in practice interviews / visits may need to be flexible). The site visit(s) will be planned through communication with the EBRD Project Manager.

The FEV plan (report) will outline:

- Proposed approach to the FEV.
- List of key documents and resource people for the review.
- Work program for the review.
- Draft of detailed program for site visits to a sample of applicants and other consultation meetings.
- First draft of criteria and indicators for assessing the relevance, effectiveness, and efficiency of operations and sustainability of the program; and
- List of specific questions and concerns relating to the review to which stakeholders will respond.

### Site visits, interviews and surveys

The FEV consulting team will conduct site visits within Ukraine. It is expected that the consultant team will interview a cross-section of stakeholders including relevant EBRD staff, EBRD contractors, government stakeholders and site installations. Applicants to the USELF may be contacted either

through face-to-face interviews or through application of a simple survey (as decided during the planning stage). Interviews with local policy / regulatory agencies may also be undertaken to gain a wider perspective on the projects achievements on renewable energy legislation, regulation and procedures. A list of stakeholders to be contacted is to be finalized during the planning stage.

#### **FEV reporting: draft**

The FEV consulting team will review additional documentation and data obtained during the site visits. The team will prepare the draft report that will cover the activities undertaken and an assessment, as well as conclusions and recommendations. The draft report will be transmitted to EBRD for fact checking. The EBRD (based on the feedback received from EBRD's Energy Efficiency and Climate Change Group, Evaluation Department and the EBRD project team) will also provide comments and inputs on the draft. The EBRD Project Manager will meet with the FEV consulting team to discuss the draft final report.

#### **FEV reporting: final**

EBRD's responses will be incorporated, and the final version of the FEV report will be produced. A tentative outline of the final report is provided in Annex 2. The Final Report should include an Executive Summary (not more than five pages) of the major findings and conclusions that will contain no commercially confidential information. The Final Report will be provided in English (electronic format agreed with the Bank).

#### **Other:**

- The consultants will keep in strictest confidence all information relating to the project, including any trade secrets (except information already in the public domain), and the business affairs of EBRD and its clients, which may be acquired in the performance of work under this midterm review.
- Although the Evaluator should feel free to discuss with the stakeholders concerned, on all matters relevant to its assignment, he/she is not authorized to make any commitment or statement on behalf of the EBRD or GEF or the project's management.
- The consultants are expected to meet the standards of a high-quality, rigorous review, which at a minimum, ensures that all findings and conclusions should be based on evidence that is presented in the final FEV report. Such evidence may be in the form of tabulations of data, compilation of survey results, statistical analysis, case study reports, testimonials, objective observations of measurable data, etc. In cases where the source of information is interviews, the method of selecting those to be interviewed should be presented in the FEV report. For case studies, site visits, or reviews of a subset of activities, the criteria and processes for selecting those cases should be presented. In the case of surveys, the questionnaire, information on the population or samples, and the response rates should be presented in the report.
- Unless otherwise agreed by the EBRD, all reports will be submitted to the Bank in English (in electronic format agreed with the Bank).
- The donors funding this assignment may require adequate visibility for their contribution. The Consultants shall collect evidence of donor's visibility, such as media coverage, official notices and press releases, reports and publications referring to the assignment. The Final Report shall detail the ways in which the donor's visibility requirements were adhered to.
- The Consultant shall be reimbursed for expenses relating to travel undertaken as part of this engagement.

#### **Implementation arrangements**

## Implementation Arrangements

The following implementation arrangements are expected:

- The EBRD will monitor the activities of the FEV consultants during the entire FEV process. The EBRD Donor Co-Financing team will supervise this consultancy assignment.
- The Consultants will liaise with the EBRD project team in London as appropriate.
- The EBRD will provide the necessary administrative support and data/information, and facilitate meetings with Bank staff and various stakeholders.
- All reports will be submitted to the EBRD Program Manager for distribution to EBRD staff and other stakeholders as appropriate.
- The Consultants will be responsible for local travel required in other cities.
- All drafts and documents that shall be validated by the EBRD shall be provided in English; however local communication shall be provided in Ukrainian where appropriate.
- The EBRD will provide inputs to the process of the FEV including rapid and timely input to draft reports.

Additional requirements for the contracting parties are set out below:

### *FEV team*

- a. FEV team shall provide information relevant for follow-up studies, including terminal evaluation verification on request to the GEF partnership up to three years after completion of the terminal evaluation.
- b. FEV team shall be composed of individuals with appropriate expertise and experience to assess the project, including the expertise to address social issues.
- c. FEV team members are independent, unbiased, and free of conflicts of interest.

### *EBRD*

- d. The EBRD will provide guidance, documentation, and support to the evaluation team.
- e. The EBRD will facilitate the engagement of the Ukrainian GEF focal point in the evaluation.
- f. The evaluation will take into account the views of all relevant stakeholders.
- g. The FEV report will be submitted by the EBRD and to the GEF Evaluation Office.
- h. The FEV report will be made publicly available and be circulated among the GEF country focal points and relevant government counterparts.

## Qualifications and deliverables

The firm to be contracted for this assignment will be able to demonstrate experience of the following:

- Project and programme evaluations for the Global Environment Facility or other relevant donors
- Environmental finance, environmental management, climate change mitigation, and/or development finance
- Working with International Financial Institutions
- Working in Ukraine

The firm will be able to propose team members for this assignment which meet the following criteria:

- Preferably 10 years or more of project and programme evaluation experience
- Preferably 3-5 years or more of experience related to environmental finance, environmental management, climate change mitigation, and/or development finance

- Direct experience evaluating projects supported by the GEF or other relevant donors
- Experience working with International Financial Institutions
- Experience working in Ukraine

## Deliverables

The following deliverables are required:

- Workplan
- Approach paper.
- Draft evaluation report
- Revised final evaluation report
- Summary presentation for EBRD, GEF and stakeholders

## Annex 1: Project Results Framework<sup>55</sup>

Project Strategy	Objectively Verifiable Indicators	Sources of Verification	Assumptions
<b>Impact</b>			
<p><i>GEF Strategic Priorities:</i> Strategic Program 3: Promoting Market Approaches for Renewable Energy</p>	<p>Total CO<sub>2eq</sub> emission reductions as a result of the use of renewable electricity – target 7 million tonnes (over 20 year lifetimes) by 2014</p> <p>Total electricity generated from renewables (GWh/yr) – target 370 GWh annually by 2014</p> <p>See Annex G for details of how these targets have been estimated</p>	<p>Reporting from project sites, data from feasibility studies, verification of savings and electricity generated or all or a representative sample of projects</p>	<p>RE service providers, developers and IPPs will find the line of business profitable</p> <p>Implementation of project activities will foster renewable energy and lower CO<sub>2eq</sub> emissions</p>
<b>Outcomes</b>			

<sup>55</sup> from Annex A of Request for CEO Endorsement (GEF 3535) for “Creating Markets for Renewable Power in Ukraine” (14 January 2010)

Project Strategy	Objectively Verifiable Indicators	Sources of Verification	Assumptions
<p>Policy, finance, business, and information barriers to renewable energy market developments in Ukraine are removed, thus facilitating growth in the renewable energy markets</p>	<p>Introduction of an enabling regulatory and incentive framework for RE based power</p> <p>Investment facilitated into renewable energy projects – target USD 150 million</p> <p>New renewable power generation capacity installed (MW<sub>el</sub>) – target 90 MW<sub>el</sub></p>	<p>Existence of legal documents, evidence of framework being used within investments.</p> <p>Sponsor’s regular reporting to the project as part of financing facility monitoring.</p> <p>Compilations of project data reported by sponsors</p>	<p>Regulation currently under discussion is, with the support of the programme, indeed enacted and enforced.</p> <p>The Program overcomes existing renewable energy market barriers and builds a sustainable renewables market capacity</p> <p>The barriers we identified are indeed the principal constraints to growth in this area.</p> <p>There is no major deterioration in the macro economic and political climate, and Ukraine emerges from the current financial crisis within the next two-three years.</p>

Outputs			
Component 1: Legislation, regulation & procedures	<p>A favourable environment for renewable energy created including:</p> <ul style="list-style-type: none"> <li>* RES law revised by Verkhovna Rada to remove deviations from good international practice</li> <li>* Feed-in tariff methodologies and procedures approved by NERC and effective</li> <li>* Detailed technical and operational procedures for assessment and approval of renewable energy projects by distribution companies adopted and effective</li> <li>* Streamlined procedures for permitting of renewable energy projects adopted</li> </ul> <p>Capacity of NERC and WEM to facilitate renewable energy investments<sup>56</sup> – target: x2 by year 3; x4 by end of project against start of project baseline</p> <p>Strategic Environmental Reviews (SER)s completed and approved by authorities covering key regions with RES potential</p>	<p>Legislative and procedural documents</p> <p>Survey of capacity shows change in availability of information</p> <p>Annual expert assessment on the state of policy development</p> <p>Approvals of SERs</p>	<p>Institutional and political barriers can effectively be overcome through analysis, information and co-ordination activities</p>
Component 2: Commercial and market development	<p>Average “renewable energy capacity score”<sup>57</sup> – target x4 by end of project</p> <p>Targeted information available to investors</p> <p>Number of firms reached through marketing for investments in renewable energy projects: Target 20</p>	<p>Survey of developers participating in training</p> <p>Surveys of impacts of awareness raising activities</p>	<p>With effective market support barriers to investment can be sufficiently reduced to make investment profitable and attractive.</p>
Component 3: Financial facilitation	<p>At least 10 projects financed and connected to the grid</p> <p>At least 75% of projects financed on limited recourse basis</p> <p>Commercial finance attracted to cover at least 20% of the total borrowing under the facility</p> <p>Commercial success of the projects and</p>	<p>Regular monitoring and reporting of support consultants</p> <p>Quarterly reports from sponsors</p> <p>Annual financial statements from sponsors</p>	<p>Macro economic conditions are such that investment in renewables continues to be attractive, and banks have capital for investment.</p>

<sup>56</sup> The system for scoring institutional capacity, including weighting of factors, will be determined during project execution. Scores will be assigned based on results of the start of project review, and compared to that in the mid-term and end-term reviews. Indicators for enhanced institutional capacity may include: knowledge of international best practice, appropriate staffing in terms of number and skills, presence of processes and procedures to facilitate renewable energy.

<sup>57</sup> The system for scoring, including weighting of factors, will be determined during project execution.

	undisturbed repayment of loans		
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## Annex 2. FEV Report Expected from the Evaluation – sample outline

The key product expected from this Final evaluation is a comprehensive analytical report in English that should, at least, include the following contents:

1. Executive summary
2. Introduction
3. The Project and its development context
4. Findings and Conclusions
  - 4.1 Project Formulation
  - 4.2 Project Implementation
  - 4.3 Results
5. Recommendations
6. Lessons learned
7. Annexes

The length of the Final evaluation report shall not exceed 40 pages in total (not including annexes). A sample outline is provided below.

### 1. Executive summary

- 1.1. Brief description of the project
- 1.2. Context and purpose of the evaluation
- 1.3. Main conclusions, recommendations and lessons learned

### 2. Introduction

- 2.1. Project background
- 2.2. Purpose of the evaluation
- 2.3. Key issues addressed
- 2.4. Methodology of the evaluation
- 2.5. Structure of the evaluation

### 3. The Project and its development context

- 3.1. Project start and its duration
- 3.2. Implementation status
- 3.3. Problems that the project seek to address
- 3.4. Immediate and development objectives of the project
- 3.5. Main stakeholders
- 3.6. Results expected

### 4. Findings and Conclusions

In addition to a descriptive assessment, all criteria marked with (R) should be rated using the following divisions: Highly Satisfactory, Satisfactory, Marginally Satisfactory, and Unsatisfactory with an explanation of the rating. Also the Overall Rating of the project should be indicated.

- 4.1. Project Formulation

4.1.1. Conceptualization/Design (R). This should assess the approach used in design, the level of appropriate definition of problems and barriers to implementation and whether the selected intervention strategy addressed the root causes and principal threats in the project area.

It should also include an assessment of the project results framework and whether the different project components and activities proposed to achieve the objective were appropriate, viable and responded to national market, institutional, legal and regulatory settings of the project. It should also assess the indicators defined for guiding implementation and measurement of achievement.

4.1.2. Country-ownership/Driveness. Assess the extent to which the project idea/conceptualization had its origin within national, sectoral and development plans and focuses on national and development priorities.

4.1.3. Stakeholder participation (R) Assess information dissemination, consultation, and "stakeholder" participation in design stages.

4.1.4. Replication approach. Determine the ways in which lessons and experiences coming out of the project were/are to be replicated or scaled up in the design and implementation of other projects.

## 4.2. Project Implementation

4.2.1. Implementation Approach (R). This should include assessments of the following aspects:

- General management and adequacy and effectiveness of the project implementation structure.
- Relevance: the extent to which the activities used are suited to local and national development priorities and organizational policies, including changes over time.
- The use of the project results matrix as a management tool during implementation and any changes made to this as a response to changing conditions and/or feedback from M & E activities if required.
- Other elements that indicate adaptive management such as comprehensive and realistic work plans routinely developed that reflect adaptive management and/or; changes in management arrangements to enhance implementation.
- The project's use/establishment of electronic information technologies to support implementation, participation and monitoring, as well as other project activities.
- Partnership strategy, general operational relationships between the institutions involved and others and how these relationships have contributed to effective implementation and achievement of project objectives.
- Technical capacities associated with the project and their role in project development, management and achievements.

4.2.2. Monitoring and evaluation (R):

- Assess the adoption of the monitoring and evaluation system during the project implementation, focusing to the relevance of the performance indicators, using SMART system of indicators (Specific, Measurable, Achievable and Attributable, Relevant and Realistic, Time-bound, Timely, Trackable and Targeted).
- Assess whether there has been adequate periodic oversight of activities during implementation to establish the extent to which inputs, work schedules, other required actions and outputs are proceeding according to plan.
- Whether formal evaluations have been held and whether action has been taken on the results of this monitoring oversight and evaluation reports.

- Stakeholder participation (R). This should include assessments of the mechanisms for information dissemination in project implementation and the extent of stakeholder participation in management. This could be the production and dissemination of information generated by the project, the establishment of partnerships and collaborative relationships, involvement of governmental institutions in project implementation, the extent of governmental support of the project.

#### 4.2.3. Financial Planning (R): Including an assessment of:

- Financial management and accountability, including disbursement issues and the extent to which the sound financial management has been integral part of achieving project results, with particular reference to adequate planning, identification of problems and adjustment of activities, budgets and inputs, and reporting.
- The cost-effectiveness of achievements - the actual project cost by objectives, outputs, activities. The evaluator should include a table of planned financing and co-financing, and actual financing and co-financing.
- Execution and implementation modalities. This should consider the effectiveness of the EBRD and EBRD's counterpart participation in selection, recruitment, assignment of experts, consultants and national counterpart staff members and in the definition of tasks and responsibilities; quantity, quality and timeliness of inputs for the project with respect to execution responsibilities, enactment of necessary legislation and budgetary provisions and extent to which these may have affected implementation and sustainability of the Project.
- Sustainability. Extent to which the benefits of the project will continue, within or outside the project domain, after it has come to an end. Relevant factors include for example: development of a sustainability strategy, establishment of financial and economic instruments and mechanisms, mainstreaming project objectives into the economy or community activities.

### 4.3. Results

- 4.3.1. Impact: assessment of the results with reference to the project's objectives. The positive and negative, foreseen and unforeseen, changes to and effects produced by a project's intervention. In GEF terms, results include direct project outputs, short- to medium term outcomes, and longer-term impact including global environmental benefits, replication effects and other, local effects. If the project did not establish a baseline (initial conditions), the evaluators should seek to determine it through the use of special methodologies so that achievements, results and impacts can be properly established.
- 4.3.2. Effectiveness: the extent to which the objectives have been achieved, or are expected to be achieved, taking into account their relative importance.
- 4.3.3. Efficiency: the measure of how economically resources or inputs (Funds, expertise, time and so on) are converted into results.
- 4.3.4. Global environmental benefits: reductions in greenhouse gas emissions, including review of the methodology for calculating CO<sub>2</sub> emission reductions and validation of direct and indirect CO<sub>2</sub> emission reductions resulting from the project.
- 4.3.5. Contribution to capacity development: extent to which the project has empowered beneficiaries and have made possible for others to use the positive experiences; ownership of projects' results;
- 4.3.6. Sustainability: prospects for continuation of project's activities and benefits for an extended period of time after completion of the GEF assistance.

4.3.7. Replication: analysis of replication potential of the project positive results in country and in the region, outlining of possible funding sources; replication to date without direct intervention of the project;

4.3.8. Synergies with other similar projects, funded by the government or other donors.

## **5. Recommendations**

Corrective actions that could be used for the design, implementation, monitoring and evaluation of the subsequent projects.

## **6. Lessons learned**

This should highlight the best and worst practices in addressing issues relating to relevance, performance and success that could be shared with other projects.

## **7. Annexes**

7.1. Evaluation TOR

7.2. Itinerary

7.3. List of persons interviewed

7.4. Summary of field visits

7.5. List of documents reviewed

7.6. Questionnaire used and summary of results

7.7. Comments by stakeholders (only in case of discrepancies with evaluation findings and conclusions)

## **7.2 Annex B: Itinerary**

There were two distinct priorities for the site visits and data collection activities:

- Obtain feedback from key stakeholders
- Conduct on-site visits to gather data for project case studies to provide further context to support the analyses.

### **7.2.1 Feedback from key stakeholders**

#### **7.2.1.1 Interviews**

The evaluation team conducted in-person and/or telephone/skype interviews with key stakeholders, such as: key EBRD staff in the Energy Efficiency and Climate Change as well as the Power and Energy Groups, Fichtner's local implementation staff, industry associations as well as NERC and relevant ministry/agency representatives.

Interviewees were given the choice on whether the interviews would be conducted in English, Ukrainian or Russian. The evaluation team also sought to accommodate cases where the stakeholder preferred to respond via questionnaire, for example so that they had time to research responses. (See Annex F for a list of interview topics by stakeholder group.)

#### **7.2.1.2 E-survey of developers**

To ensure the evaluation was able to reach the broader audience of developers, the evaluation team conducted an online survey of participating and nonparticipating developers. The survey consisted of a mix of closed and open-questions, the latter ensuring stakeholders had an opportunity to respond more freely on points of particular interest to them. The survey was provided in both English and Ukrainian. (See Annex F for a summary of survey results and a copy of the survey.)

### **7.2.2 Project case studies**

Two installations were selected as subjects for project case studies to provide further details and context to feed into the analyses addressing the evaluation questions.

The case study findings added an additional layer of detail to our overall reporting on the USELF's relevance, effectiveness, and efficiency overall. They provided nuance to help explain how an overall finding has played out in practice in a particular context.

The case studies were seen as central to understanding of medium-term impacts of the USELF, contributing evidence to address the evaluation questions, and generating lessons for the future by looking forward based on participant experiences, and what should be considered in any future phases of the USELF or similar initiatives.

The two sites originally selected for the project case studies were Rokytno Biogas Plant and Ivankiv Biomass Plant. However, during the evaluation planning phase the team learned that these sites were about to be visited by EBRD and EBRD requested that other sites be selected. The sites ultimately selected were:

- **#039: Hydropower LLC's Small Hydro Plant** (Svarychiv, Ivano-Frankivsk oblast); – This site was selected to provide further insight into how the changes to the feed-in tariff advocated by USELF activities influenced the attractiveness of participation in USELF.<sup>58</sup> The site visit was completed on 27 October 2017.
- **#103: Karpatskyi Wind Farm** (Stary Sambir, Lviv oblast) This site was selected as it received one of the largest funding amounts (#3) and has the largest capacity (MW<sub>e</sub>) of all of the USELF sites (during the GEF support window) and is an example of a developer who is applying experience gained in an earlier project to a new project (#003: Eco-Optima Wind). An in-depth interview was completed with the developer; however, the developer did not ultimately agree to a site visit. After consulting with EBRD and confirming the site is operational by reviewing output data, we dropped the site visit portion of the case study.

Key topics addressed during the data collection for the case studies included:

- What are the characteristics of the developer (e.g. type, geographies/technologies targeted, level/nature of prior experience, other projects)?
- What were the main drivers that lead to the development of this project?
- What other enabling or hindering factors were there in the development of this project (e.g. triggers, surprises, challenges)?
- How did Ukraine's regulatory and institutional context facilitate or impede the development of this project?
- What role did USELF regulatory support and technical assistance activities play in the overall development of this project?
- How was this project financed (financial structure, funding sources)?
- What role did USELF funding play in the overall financial structure of this project? What alternative funding sources were there?
- What investment yield is expected?
- What are the specific site characteristics, including power generation and emission reduction outcomes?
- How is the site performing relative to anticipated; also future expectations?
- In what ways is this project likely to affect the local market for renewable energy?
- What, if any, other social, economic or environmental impacts were there?
- What else happened as a result of this project [intended/unintended effects]?
- What are the [positive/negative] perceptions of USELF participation?
- What are the key lessons learned?

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<sup>58</sup> Amendment to the Law of Ukraine 'On electricity' that introduces a feed-in tariff for biogas plants, was approved by the Parliament (Verkhovna Rada) of Ukraine on November 20, 2012 and come into force on 1 April, 2013.

### 7.3 Annex C: List of persons interviewed

Table 14 provides a listing of stakeholders consulted as part of this evaluation.

**Table 14. Stakeholder interviews**

Stakeholder affiliation	Stakeholder name	Date	Mode
EBRD, climate change and energy efficiency	Olena Borysova	22.09.2017; 27.11.2017	webconference; in-person
EBRD, climate change and energy efficiency	Sergiy Maslichenko	13.11.2017	in-person
EBRD, power and energy	Olga Yeriomina, Pavle Milekic and Anna Ebanoidze	20.11.2017	in-person/ webconference
Project Implementation Unit (Fichtner)	Maria Belova		webconference
Project Implementation Unit (IMEPOWER)	Yuri Kubrushko	10.11.2017	in-person
State Agency for Energy Efficiency (SAEE)	Kostiantyn Gura	10.11.2017	in-person
Ministry of Ecology and Natural Resources	Vladyslav Marushevsky	15.11.2017	in-person
Bioenergy Association of Ukraine	Georgiy Geletukha	9.11.2017	in-person
Ukrainian Association of Renewable Energy	Oleksii Orzhel	13.11.2017	in-person
Case study: Hydropower LLC	Anton Senyuk	24.10.2017, 27.10.2017	in-person
Case study: Eco-Optima	Maksym Kozytsky	25.10.2017	in-person

#### 7.4 Annex D: Summary of in-depth interviews and field visits with developers

As discussed in Section 7.2.2, the FEV team selected two projects that received technical assistance during the GEF project window that are now operational for which to conduct more in-depth review.

##### Hydropower LLC

An interview was conducted with Mr. Anton Senyuk, Director of the Investment Department, Visum Capital (owner of Hydropower LLC) on 24 October 2017. As a follow-up to the interview, a site visit was organized to the hydropower plant located in Svarychiv, Ivano-Frankivsk oblast. A summary of the findings during the interview and site visit is provided below.

Visum Capital initially approached USELF back in 2012, when Visum was seeking financing for two small HPP projects based in Goloshyno, Ivano-Frankivsk region, with the combined capacity of 1.4 MW. Due to the opposition from local interest groups the construction of the Goloshyno power plants was never completed.

Fichtner and other EBRD consultants provided assistance to Visum regarding the project in Svarychiv, Ivano-Frankivsk. Svarychiv HPP is a greenfield project (no previous HPP in place, but an existing dam) with the capacity of 1 MW. Svarychiv HPP was commissioned on 24.01.2017 and started generating electricity into the grid starting from 18.02.2017.

Visum has signed a social agreement with the village council. The agreement included a one-time payment to the local budget in the amount of UAH 250,000 (EUR 8,000). In addition, Visum provides periodical assistance with supporting the fish stock in the river (by regularly delivering the young fish). During the construction phase, the machinery was sometimes provided to the needs of the village, at the request of the village council. Currently support is provided to the local football team. To address the concerns of the local population, Visum has organized visits to an operational small HPP in Zakarpatska oblast. The visits helped to further build relations with the local community.

Visum Capital has two more small hydropower plants in its pipeline, one of which already has the construction permit. The projects are to be financed with loan financing, likely from one of the state-owned banks, e.g. Ukrgasbank.



Photo: Svarychiv hydropower plant

## **Eco-Optima**

An interview was conducted with Mr. Maksym Kozytsky, director of Eco-Optima, on 25 October 2017. A summary of the findings during the interview is provided below.

Eco-Optima has approached USELF after making initial due diligence of the potential wind farm location near Stary Sambir, Lviv oblast. USELF had provided extensive support to the project, such as developing the funding application and resolving technical difficulties. Due to currency devaluation, the project was split into two phases.

As of 2014, the two turbines at Stary Sambir were put in operation; the second phase of the project with two more turbines was finished in 2016. As of October 2017, the second stage of the Stary Sambir wind farm is now in the process of commissioning.

EBRD and USELF have provided their support with the project through all the difficulties through the project. They assisted in analyzing the site, concluding the purchase agreement for wind turbines and developing necessary documentation.

All technical requirements, including environmental and social assessment, were largely supported by USELF experts. For example, USELF has provided an expert to ensure that EIA is in line with the international standards, including such issues as occupational safety and health, biodiversity protection, etc. All potential concerns were addressed in the EIA study.

Eco Optima has plans to implement more renewable energy projects, both wind and solar power. Next year a 30MW solar power plant, financed by an EBRD loan, is to be commissioned. Eco-Optima has further plans to construct a 50MW wind farm near Skole, Lviv oblast.

## 7.5 Annex E: List of documents reviewed

Table 15 provides a listing of documents reviewed as part of this evaluation.

**Table 15. Documents reviewed.**

Document	Author	Date	Source
Strategic Environmental Review Scoping Report	Black & Veatch	Jan. 2011	Public
SER Project Overview Leaflet	Black & Veatch	Dec. 2011	Public
6 x technology-specific Renewable Energy Scenario Reports	Black & Veatch	Sep. 2011	Public
Strategic Environmental Review (with appendices)	Black & Veatch	Sep. 2012	Public
Request for CEO Endorsement / Approval	EBRD	Jan. 2010	EBRD
Ukraine Renewable Energy Direct Lending Facility: Project Summary	EBRD	Nov. 2009	Public
Final GEF Project Implementation Report (PIR)	EBRD	Nov.2017	EBRD
List of stakeholders at EBRD and within the relevant Ministries	EBRD	Sep. 2017	EBRD
List of all USELF projects	EBRD	Sep. 2017	EBRD
USELF Mid Term Review	Eco Ltd.	Apr. 2013	EBRD
Project Implementation Unit Progress reports	Fichtner	Sept. 2012-Dec. 2015+ Sept 2017	Fichtner
Training Needs Assessment	Fichtner	Aug. 2011	EBRD
Assessment of the main barriers to the project pipeline	Fichtner	Oct.2012	Fichtner
Assessment of the projects likely to receive financing in late 2017-2018	Fichtner	Oct. 2012	Fichtner
6 x technology-specific Application Questionnaires	Fichtner	N/A	Public
Renewable Energy Developers' Manual	Fichtner	2014	Public
Final Report (with annexes)	Mercados	Sep. 2012	EBRD
Final Policy Tracker	Mercados	Sep. 2012	EBRD
Renewable Energy Incentives in Ukraine: Investor Guide	IFC	2013	Public
REMAP 2030: Renewable Energy Prospects for Ukraine	IRENA	2015	Public
Ukraine Progress Report on promotion and use of energy from Renewable Energy Source	Gov't of Ukraine	2016	Public
National Renewable Energy Action Plan up to 2020	Gov't of Ukraine	Oct. 2014	Public
National Energy Strategy for Ukraine	Gov't of Ukraine	Oct. 2017	Public

## 7.6 Annex F: Survey and interview topics

This section provides a listing of topics addressed by stakeholder group. (See Table 16) For all but the developer survey, topics were rephrased as appropriate and customized for each individual's expected role and knowledge of the USELF before the interviews were conducted. The questionnaire used for the developer survey is in the next subsection.

**Table 16. Overview of topics by stakeholder group**

Topic	E B R D	P I U	p a r t i c i p a n t s	D e v e l o p e r s	M i n i s t r a c t o r s	M a r k e t a c t o r s
Name, role, background	√	√	√	√	√	√
Familiarity with USELF				√	√	√
Evolution of USELF since 2012 [after MTR]	√	√				
Changes made to do feedback from MTR [refer to list of proposed actions]	√	√				
Role of GEF, relative to other funding at start up	√	√				
Overall perceptions of USELF, especially from inception through 2015	√	√	√	√	√	√
Strengths/weaknesses? most impactful component	√	√	√	√	√	√
How is the market evolving and how varies by type of renewable [at key points 2008/2014-15/present]	√	√	√	√	√	√
Role/influence of regulatory changes supported by USELF	√	√	√	√	√	√
Role/influence of Strategic Environmental Review supported by USELF	√	√	√	√	√	√
Influence of training, templates and other technical assistance, supported by USELF	√	√	√	√	√	√
Next steps/new challenges for the market for renewables in Ukraine	√	√	√	√	√	√
Next steps/new challenges for USELF	√	√				
Perceptions of or actual examples of replication potential	√	√			√	√
Other initiatives active in the Ukraine offering financing or otherwise influencing the market for renewables	√	√	√	√	√	√
Engagement strategy with other initiatives	√	√				
Other factors (political, economic, regional instability) influencing the market for renewables	√	√	√	√	√	√
Overview of USELF activities and results achieved (e.g. admin, trainings, technical assistance) [since MTR to 2015/since 2015]		√				
Current implementation challenges, and evolution over time	√	√				

Topic	E B R D	P I U	p a r t i c i p a n t s	D e v e l o p e r s  a l l	M i n i s t r y	M a r k e t  a c t o r s
Review GEF funded activities from MTR to funding depletion (e.g. PIU, trainings) [costs by objectives, outputs, activities; for each project planned vs. actual financing and level of co-financing.]		√				
Review financial management and disbursement strategy for GEF funds	√	√				
Perception of cost-efficiency relative to other EBRD initiatives	√					
Review of staff and technical capacities involved in implementation	√	√				
Level of EBRD involvement in day to day activities	√	√				
Strategy and tools used for EBRD oversight of the PIU	√	√				
Characterization of operational relationships between institutions involved	√	√			√	
Role of IMEPOWER		√				
Level and type of support provided to developers and how this has evolved		√				
Changes to implementation strategy over time and reasons	√	√				
Use of adaptive management approaches	√	√				
Use of results matrix as a management tool	√	√				
Use of electronic information technologies to support activities	√	√				
Level of (perceived) satisfaction of developers		√				
Background on projects that dropped out		√				
Remaining developer needs not [yet] being met		√	√			
Any actions to create baseline for institutional capacity development after MTR feedback		√				
Satisfaction with interactions with USELF staff	√		√		√	
Satisfaction with interactions with EBRD staff		√		√		
Level and type of support provided by USELF (financial, technical or other)			√			
Actions if USELF had not been available			√			
If any USELF dropout projects, reasons project did not proceed			√	√		
If never applied, reasons have not applied to USELF				√		

## 7.6.1 Developer survey results

The FEV team drafted the e-survey for developers and the USELF PIU sent out the link to their contact list. Developers had the opportunity to respond over three weeks, from late October to mid-November 2017. We received 14 responses, and all developers reported being somewhat or very familiar with the program.<sup>[1]</sup>

When reviewing the responses in the following subsection, readers should note that developers who were actively engaged with and benefiting from the program, such as having already received financing (5 of 14; 36%) or waiting to hear on an existing application for financing (7 of 14; 50%) were the most likely to respond to this survey. Only two developers had not (yet) submitted an application.

### 7.6.1.1 Characteristics of developers

Twelve of the developers reported being active in Ukraine only, with the remaining two active in neighbouring countries. The developers reported focusing on a variety of technologies with seven active for only one renewable energy technology and five active in multiple areas. Two of the single technology developers have developed only one renewable energy project so far, seven have developed or are developing two to four projects so far and the five remaining have or are developing five or more projects. The overwhelming majority (10 of 12; 83%) plan to or already are developing more renewable energy projects in Ukraine, with the remaining two reporting they are considering developing more.

### 7.6.1.1 Role of USELF financing

The 12 developers who had submitted applications for financing reported that the USELF financing has or will play an important role in the project. Using a scale of 0 to 5, all chose 3, 4, or 5, averaging 4.4. Five developers reported that the USELF team had also helped them secure other financing.

The comments developers volunteered explaining their rating were universally positive regarding the financing conditions provided. Some praised EBRD and/or USELF specifically, for example:

- “For us it was strategically important to have in our project such strong financing partner as EBRD. Moreover, we understand that USELF team has already a big experience in similar projects, so their support could be very helpful for our project.”
- “We started the project in 2010, it was one of the first projects of a modern [redacted] power plant in Ukraine, and one of the few opportunities to attract direct financing to the green energy project in Ukraine.”
- “Cooperation with the EBRD in our opinion may be a positive signal for the company to other credit institutions, including abroad....”
- “Favourable terms of financing, technical support, support of our project at all stages of its implementation, specialization of the Project in the field of renewable energy.”

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<sup>[1]</sup> The survey was provided in Ukrainian (12 responses) and in English (2 responses). Comments provided in Ukrainian have been translated into English, when quoted in this document. obviously Identifying information has been redacted from comments as needed to protect the identify of the respondent.

Alternative financing options developers mentioned include: Nordic Environment Finance Corporation (NEFCO), International Finance Corporation (IFC), Danish Investment Fund for Developing Countries (IFU), Overseas Private Investment Corporation (OPIC), European Investment Bank (EIB), Black Sea Trade and Development Bank (BSTDB), and ProCredit Bank as well as Ukrainian commercial and state banks.

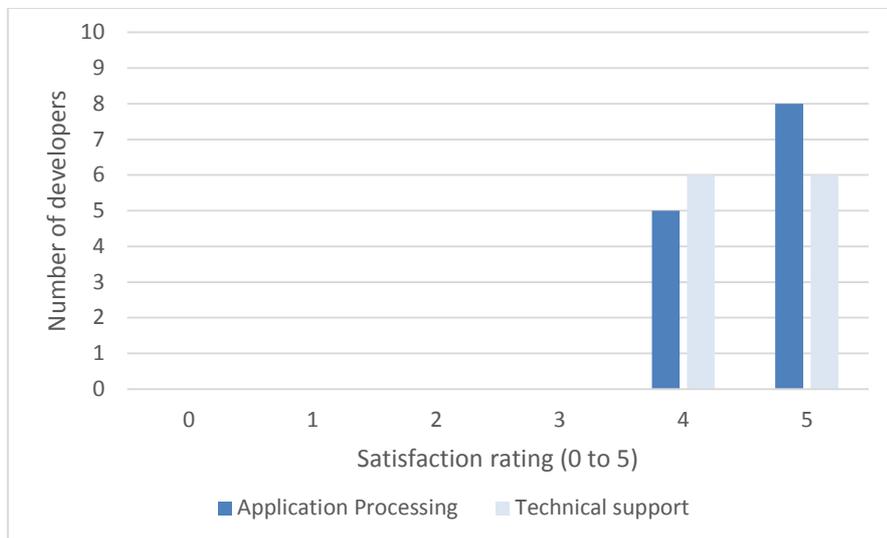
#### 7.6.1.2 Satisfaction with the USELF

As shown in Figure 3, developers reported high satisfaction overall with the USELF PIU. When asked to rate how satisfied with they “with your interactions with the USELF application processing,” all who had submitted an application (10) reported high satisfaction, choosing either a 4 or 5 on a 5-point scale, with the average at 4.6. Several developers offered additional positive feedback regarding their experiences with the USELF PIU, though one also reported mistakes in projects relating to biomass and biogas that also had an influence on the potential for future projects. Two developers gave an indication that earlier feedback of whether their projects would be viable candidates would be appreciated.:

- “In Ukraine it is difficult to find financing for alternative energy projects. It would be much better if USELF could pre-evaluate its projects to finance them. This will greatly simplify the search for investors for such projects, since even prior formal approval will provide confidence to potential investors that the project can be implemented.”
- “During our cooperation with the project, we submitted a number of applications for [redacted]. A very large number of materials were processed, a representative of the company Fichtner visited all the facilities. But after preparing the previous reports, it was decided that the projects were too small for lending.”

The survey also addressed technical assistance, including specific resources, such as the Developer Manual, Strategic Environmental review and trainings provided by the USELF team.

The overwhelming majority (12 of 14; 85%) reported that they had received technical support beyond standard application processing, which they found helpful. The 12 developers who also ranked their satisfaction with interactions with the USELF PIU regarding technical project guidance or resources only chose 4 or 5 on a 5-point scale, averaging 4.5. (See Figure 3)



**Figure 3. Developer satisfaction with USELF PIU.**

Most developers were not familiar with the published resources such as the Developer Manual or the Strategic Environmental Review, however those that were usually found these resources helpful. (See Table 17) Even fewer reported that they or a colleague had participated in a training (5 of 14; 35%).

**Table 17. Developer use of resources published by USELF**

Response	Strategic Environmental Review	Developer Manual
Used, and found it helpful	29%	40%
Looked at it, but not particularly useful	7%	-
Not aware/Don't know	64%	60%
Number of responses	14	14

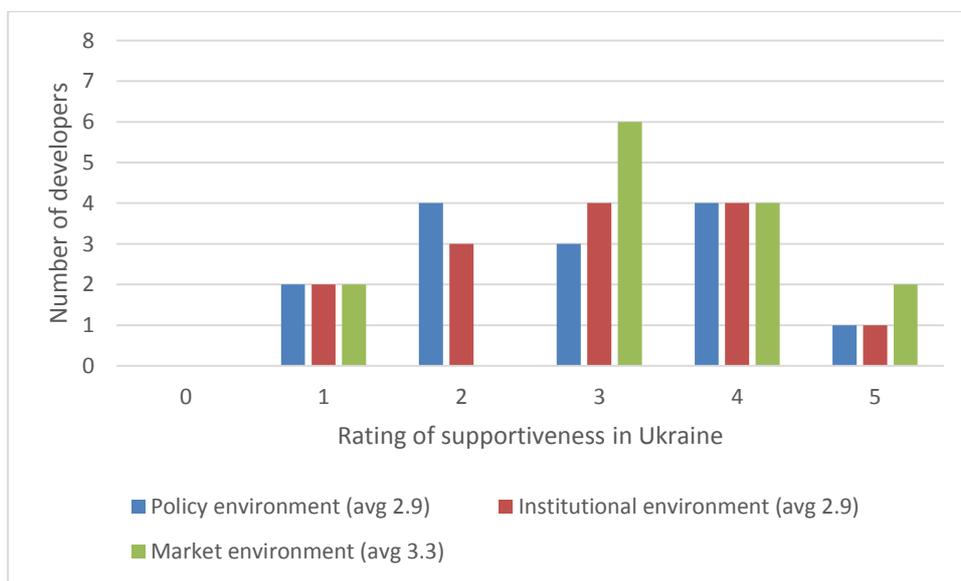
However, several developers volunteered they received tailored technical support, such as regarding structuring the project, preparing documents, project financing and/or legal issues, which they found especially helpful.

When given an opportunity to reflect on what (else) the USELF PIU could realistically do to support renewable energy projects the four that replied mentioned very practical and specific assistance relating to their project – in line with the tailored technical support the USELF PIU has been providing. Examples include, 'grid assessments', 'specialized information on the operating activities of similar

plants', 'maps of wind potentials'.<sup>59</sup> One mentioned a 'manual with requirements for all project participants' and two mentioned 'trainings on development of renewable energy projects...' such as how to attract investors or more technical knowledge 'to help them choose the right solution for their project'.

### 7.6.1.3 Status of an enabling environment for renewable energy in Ukraine

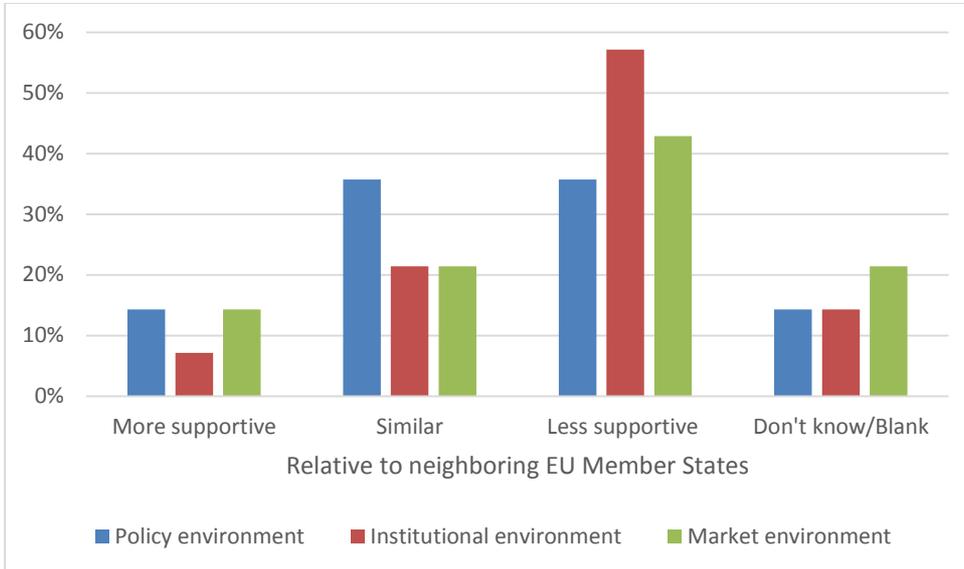
As shown in **Error! Reference source not found.**, the 14 developers who responded to the survey perceived the market environment (average 3.3 on 0 to 5 scale) somewhat more favourable than the policy and institutional environments (both averaging 2.9) for renewable energy in Ukraine.



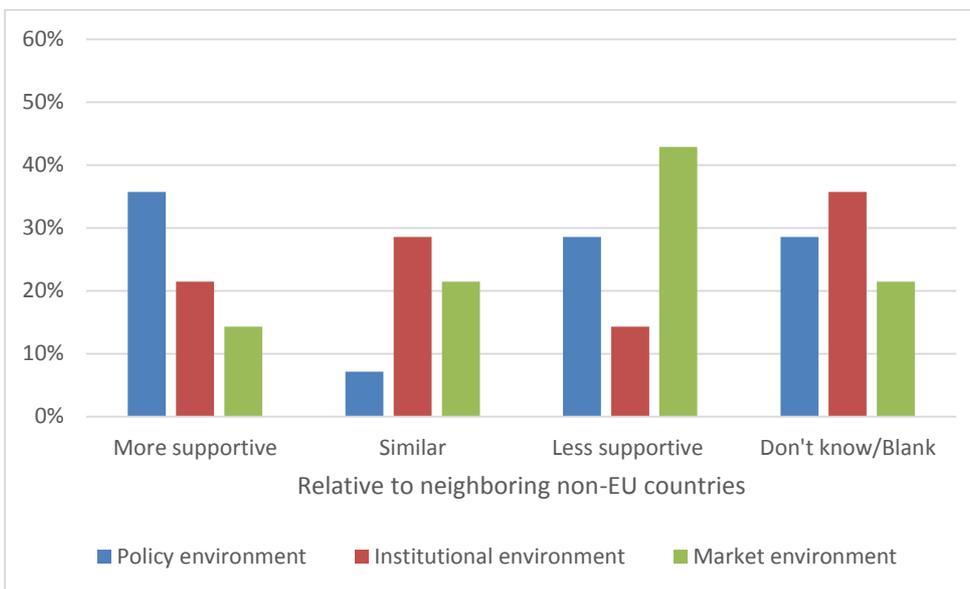
**Figure 4. Summary of perceptions of the enabling environment in Ukraine.**

When asked to compare the enabling environment for renewable energy in neighbouring countries, developers were more likely to consider the overall environment in Ukraine less supportive than in neighbouring EU Member States, yet more supportive than in neighbouring non-EU countries. This trend is shown in the assessments of the policy and institutional environments, Developers gave the same assessment for the market environment for renewable energy in neighbouring EU and non-EU countries, that is less supportive relative to both neighbouring country types. (See Figure 5 and Figure 6)

<sup>59</sup> Those that provided comments were not necessarily familiar with the existing Strategic Environmental Review or Developer Manual.

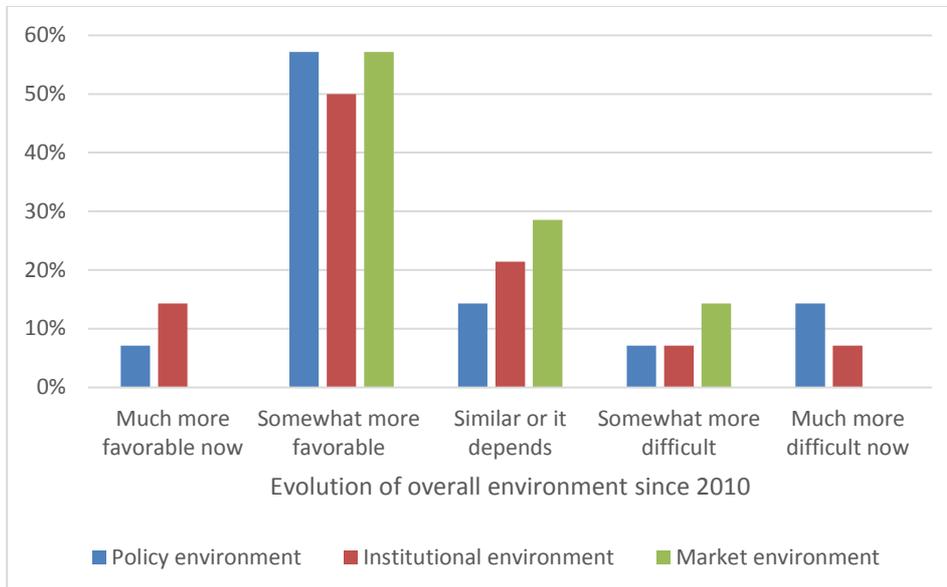


**Figure 5. Perceptions of the environment relative to neighbouring EU Member States. (n=14)**



**Figure 6. Perceptions of the environment relative to neighbouring non-EU countries. (n=14)**

As indicated in Figure 7, developers perceive that the overall enabling environment for renewable energy in Ukraine is somewhat more favourable now than in 2010. The assessment of the policy and institutional environments are slightly more favourable overall than that for the market environment, but the difference is not significant.



**Figure 7. Perceptions of the evolution of the overall environment in Ukraine since 2010. (n=14)**

Several developers provided comments on the enabling environment for renewable energy in Ukraine. The key themes noted are as follows:

- The USELF has a good reputation and developers want it to continue.
- The feed-in tariff is seen as an advantage, yet there are perceived to be many challenges relating to land, permits, access to the grid and general bureaucracy that slows the process and impedes success overall.
- Financing is easier to identify than in earlier years, but still a challenge.
- Ukrainian politicians and government officials are perceived as not understanding of and/or interested promoting renewable energy particularly at the local level.
- Two developers mentioned corruption issues with government officials
- The experience differs somewhat depending on the locality (region/city).

## 7.6.2 Copy of e-survey for developers

### 7.6.2.1 Section 1: Introduction

This survey is targeted to renewable energy project developers in the Ukraine. It is intended to facilitate input into the evaluation of the Ukraine Sustainable Energy Lending Facility (USELF) for the European Bank for Reconstruction and Development (EBRD). It is designed to take a maximum of 10 minutes of your time. All responses are anonymous, unless you choose to provide your contact information at the end. Regardless, all responses are confidential. Thank you for your participation!

## Background:

- The EBRD hired the GreenStream consortia to conduct an evaluation of USELF, to support their reporting to the Global Environmental Facility (GEF).
- As you may be aware, the USELF provides financing and technical assistance to support the development of renewable energy projects in Ukraine.
- USELF investments are expected to provide commercial returns, alongside development and environment benefits and demonstrate that renewable investments in Ukraine are both feasible and profitable and catalyse future investments.
- This is purely a learning exercise to feed back into the decisions and approaches the EBRD and GEF makes with its climate finance portfolio. Information will be held with strict confidentiality and not be made public without your explicit permission. Anonymized survey responses may be provided to the EBRD.

#### 7.6.2.2 Section 2: Company Information

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**First, please tell us what type(s) of projects you develop? (Please check all that apply.)**

---

biogas

---

biomass

---

hydropower: small and/or micro

---

solar PV

---

wind

---

other renewable energy projects for types not listed above

---

other conventional energy projects

---

other infrastructure projects

---

**Where is your company active in developing renewable energy projects of any type? (Please check all that apply.)**

---

Ukraine

---

Neighboring EU member states

---

---

Other EU member states

---

Neighboring countries not members of the EU

---

Caucasus and Central Asia states

---

Other \_\_\_\_\_

---

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**How may renewable energy projects have you developed, or are in the process of developing, in Ukraine?**

---

None

---

1

---

2-4

---

5+

---

---

**Is your company currently planning development of new renewable energy projects in Ukraine in the next 1-2 years (not already included in the figures above)? (Please pick the closest to your view.)**

---

Yes, definitely

---

Maybe, considering it

---

No or unlikely

---

Don't know/decline to state

---

---

**[Optional:] Please share why you are likely or unlikely to develop (more) renewable energy projects in Ukraine in the future.**

---

[text box]

---

### 7.6.2.3 Section 3: Familiarity with the USELF

---

**How familiar are you with the USELF? (Please pick the closest to your view.)**

---

Very familiar

---

Somewhat familiar

---

Not familiar or never heard of it before today [IF NO, SKIP TO BROADER CONTEXT]

---

### 7.6.2.4 Section 4: Experiences with the USELF

We'd like to ask you a few basic questions about your experiences with the USELF.

---

**Overall, how satisfied are you with your interactions with the USELF application processing using a scale of 0-5, with 0 = not at all satisfied and 5=extremely satisfied? (Please skip this question if you do not know or have not submitted an application to USELF.)**

---

[provide scale]

---

Don't know/decline to state

---

---

**[Optional:] Please share the reasons for the score you provided. Please include any insights on how your satisfaction has changed over time. (Please skip this question if you do not know or have not submitted an application to USELF.)**

---

[text box]

---

---

**To your recollection, have you or your company received any technical support regarding a specific project or concept from the USELF beyond standard application review? (Please pick the closest to**

---

---

**your situation.)**

[Project-specific technical support could include suggestions to improve the project and/or relating to feasibility studies, obtaining permits, advising on contracts, etc.]

---

Yes, I or other colleagues received technical support, which was helpful

---

Yes, I or other colleagues received technical support, but did not find it particularly helpful

---

No, we did not receive this type of support

---

Don't know/decline to state

---

---

**To your recollection, have you or your company used the Strategic Environmental Review available from the USELF? (Please pick the closest to your situation.)**

---

Yes, I or other colleagues have used it and found it helpful

---

Yes, I or other colleagues looked at it, but did not find it particularly useful

---

No, I was not aware of this resource

---

Don't know/decline to state

---

---

**To your recollection, have you or your company used the Developer's Manual available from the USELF? (Please pick the closest to your situation.)**

---

Yes, I or other colleagues have used it and found it helpful

---

Yes, I or other colleagues looked at it, but did not find it particularly useful

---

No, I was not aware of this resource

---

Don't know/decline to state

---

---

**To your recollection, have you or your company participated in any trainings hosted by the USELF?  
(Please pick the closest to your situation.)**

- Yes, I have participated in one or more trainings
- Yes, while I have not participated in a training, I know other colleagues have
- No, I am not aware of any trainings or did not participate
- Don't know/decline to state

---

**[Optional:] Please list any other support or resources you or your company received from the USELF team not included above.**

[text box]

---

**[Optional:] Please share which technical support or resource(s) provided by the USELF were most useful to you.**

[text box]

---

**Overall, how satisfied are you with your interactions with the USELF regarding technical project guidance or resources using a scale of 0-5, with 0 = not at all satisfied and 5=extremely satisfied?  
(Please skip this question if you do not know or have not submitted an application to USELF.)**

[provide scale]

- Don't know/decline to state

---

**[Optional:] Please share the reasons for the score you provided. Please include any insights on how your satisfaction has changed over time. (Please skip this question if you do not know or have not submitted an application to USELF.)**

---

[text box]

---

---

**[Optional:] What other technical resources could the USELF realistically provide that would help you to develop renewable energy projects in Ukraine?**

---

[text box]

---

---

**Has your company applied for, or are receiving financing from the USELF (Please pick the closest to your situation.)**

---

- Yes, USELF financing confirmed for 1 or more projects
  - Yes, have applied for USELF financing but are awaiting final confirmation
  - No, we have not applied for financing from the USELF. IF NO, SKIP TO BROADER CONTEXT
  - Don't know/decline to state IF DON'T KNOW, SKIP TO BROADER CONTEXT
- 

#### 7.6.2.5 Section 5: Financial Structure of the project

We'd like to ask you a few questions regarding the project for which you have applied for USELF financing. If you have more than one project, please think of the most recent project.

---

**Using a scale of 0 to 5 How important was/is the USELF financing in the overall financial structure of this project? [0 = not important, similar options were available, 5 = extremely important, project would not have gone forward]**

---

[provide scale]

---

- Don't know/decline to state
-

---

**[Optional:] What made your company decide to apply to USELF for financing?**

---

[text box]

---

---

**Did the USELF team help you secure other financing?**

---

Yes

---

No

---

Don't know/decline to state

---

---

**[Optional:] What alternative funding sources were/are available (instead of USELF)?**

---

[text box]

---

---

**[Optional:] What were the main drivers that lead to the development of this project? [i.e. What are the key conditions that enabled this project to move forward]?**

---

[text box]

---

#### **7.6.2.6 Section 6: Broader Context**

Now, we would like to ask a few questions about the broader context for doing renewable energy projects in Ukraine.

##### **7.6.2.6.1 Policy environment**

---

**On a scale of 0-5 with 0 being no supportive policies, 1 being few supportive policies and 5 being a highly supportive policy environment, where does Ukraine's clean energy policy environment rank?**

---

[provide scale]

---

---

Don't know/decline to state

---

---

**[Optional:] Please elaborate on why you felt this score is appropriate.**

---

[text box]

---

---

**How would you say the policy environment for renewable energy in Ukraine compares with that of neighboring EU countries? (Please pick the closest to your view.)**

---

More favorable

---

Similar

---

More difficult

---

Don't know/decline to state

---

---

**How would you say the policy environment for renewable energy in Ukraine compares with that of neighboring non-EU countries? (Please pick the closest to your view.)**

---

More favorable

---

Similar

---

More difficult

---

Don't know/decline to state

---

---

**How has the policy environment evolved over time? How was it from 2010-2011 compared to now? (Please pick the closest to your view.)**

---

Much more favorable now than in 2010

---

---

Somewhat more favorable now than in 2010

---

Similar or it depends

---

Somewhat more difficult now than in 2010

---

Much more difficult now than in 2010

---

Don't know/decline to state

---

#### 7.6.2.6.2 Institutional, legal, and regulatory environment

The institutional environment can be understood as the legal & regulatory infrastructure, the quality of corporate governance, the security of property rights, the amount of corruption, etc.

---

**On a scale of 0-5 with 0 being unsupportive, and 5 being highly supportive, how would you rank the institutional environment for renewable energy in Ukraine?**

---

[provide scale]

---

Don't know/decline to state

---

---

**[Optional:] Please elaborate on why you felt this score is appropriate. Feel free to add the what has been the biggest institutional, regulatory, and/or legal challenge/advantage for your projects.**

---

[text box]

---

---

**How would you say the institutional, regulatory, and/or legal environment for renewable energy in Ukraine compares with that of neighboring EU countries? (Please pick the closest to your view.)**

---

More favorable

---

Similar

---

More difficult

---

---

Don't know/decline to state

---

---

**How would you say the institutional, regulatory, and/or legal environment for renewable energy in Ukraine compares with that of neighboring non-EU countries? (Please pick the closest to your view.)**

---

More favorable

---

Similar

---

More difficult

---

Don't know/decline to state

---

---

**How has the institutional, regulatory, and/or legal environment evolved over time? How was it from 2010-2011 compared to now? (Please pick the closest to your view.)**

---

Much more favorable now than in 2010

---

Somewhat more favorable now than in 2010

---

Similar or it depends

---

Somewhat more difficult now than in 2010

---

Much more difficult now than in 2010

---

Don't know/decline to state

---

### 7.6.2.6.3 Market environment

---

**On a scale of 0-5, please rank the overall strength of the renewable energy market environment in Ukraine? 0 = totally unsupportive market environment (i.e., lacking economic size/stability, financial institutions, capital market sophistication, and investment track-record), and 5 = extremely supportive market environment?**

---

---

[provide scale]

---

Don't know/decline to state

---

**[Optional:] Please elaborate on why you felt this score is appropriate. Feel free to add the what has been the biggest market challenge/advantage for your projects.**

---

[text box]

---

**How would you say the strength of the market environment for renewable energy in Ukraine compares with that of neighboring EU countries? (Please pick the closest to your view.)**

---

More favorable

---

Similar

---

More difficult

---

Don't know/decline to state

---

**How would you say the strength of the market environment for renewable energy in Ukraine compares with that of neighboring non-EU countries? (Please pick the closest to your view.)**

---

More favorable

---

Similar

---

More difficult

---

Don't know/decline to state

---

**How has the market environment evolved over time? How was it from 2010-2011 compared to now?**

---

---

**(Please pick the closest to your view.)**

---

Much more favorable now than in 2010

---

Somewhat more favorable now than in 2010

---

Similar or it depends

---

Somewhat more difficult now than in 2010

---

Much more difficult now than in 2010

---

Don't know/decline to state

---

#### **7.6.2.7 Section 7: Wrap up**

---

**[Optional:] Is there any other feedback you would like to share regarding your experiences with the USELF before we close?**

---

[text box]

---

---

**[Optional:] If you wish, you can provide your name and contact information so that we may follow up with you in case there is a need to clarify any of your responses.**

---

[text box]

---

**Thank you for your participation!**

## 7.7 Annex G: Comments by stakeholders