Terminal Evaluation Review form, GEF Independent Evaluation Office, APR 2015

1. Project Data

Summary project data			
GEF project ID		3257	
GEF Agency project ID		3880	
GEF Replenishment Phase		GEF-4	
Lead GEF Agency (include all for joint projects)		UNDP	
Project name		Biomass Energy for Employment and Energy Security	
Country/Countries		Bosnia and Herzegovina (BiH)	
Region		Europe and Central Asia	
Focal area		Climate Change	
Operational Program or Strategic Priorities/Objectives		SO-5; SP-4	
Executing agencies involved		Ministry of Foreign Trade and Economic Relations	
NGOs/CBOs involvement		FBiH Environmental Protection Fund	
Private sector involvement		Not given	
CEO Endorsement (FSP) /Approval date (MSP)		October 27, 2008	
Effectiveness date / project start		September 21, 2009	
Expected date of project completion (at start)		December 31, 2013	
Actual date of project completion		December 31, 2014	
Project Financing			
		At Endorsement (US $M)	**At Completion (US $M)**
Project Preparation Grant	GEF funding		
	Co-financing		
GEF Project Grant		.97	.97
Co-financing	IA own	1.32	1.87[1]
	Government		.13
	Other multi- /bi-laterals		.15
	Private sector	.3	
	NGOs/CSOs		
Total GEF funding		.97	.97
Total Co-financing		1.62	2.15
Total project funding (GEF grant(s) + co-financing)		2.59	3.12
Terminal evaluation/review information			
TE completion date		November 2014	
Author of TE		Vesa Rutanen	
TER completion date		March 10, 2016	
TER prepared by		Laura Nissley	

[1] This figure includes $1.3 million for activities completed under the UNDP/SRPP project (which were completed before the UNDP-GEF project began). $.27 million was contributed under the UNDP Green Economic Development Program; and $.3 was contributed by UNDP for the boiler installations and administrative backstopping from the UNDP/SRRP project (TE pg. 33).

TER peer review by (if GEF IEO review)	Molly Watts

2. Summary of Project Ratings

Criteria	Final PIR	IA Terminal Evaluation	IA Evaluation Office Review	GEF IEO Review
Project Outcomes	S	S	--	MS
Sustainability of Outcomes		L	--	ML
M&E Design		MS	--	MU
M&E Implementation		MS	--	MS
Quality of Implementation		HS	--	MS
Quality of Execution		N/A	--	UA
Quality of the Terminal Evaluation Report		--	--	MS

3. Project Objectives

3.1 Global Environmental Objectives of the project:

The Project Document[2] does not explicitly state the Global Environmental Objectives of the project, but the overall goal of the project was to "a sustainable reduction of GHG emissions through a transformation of the biomass energy market in Bosnia and Herzegovina" (pg. 25). At the time of the project design, Bosnia and Herzegovina (BiH) was very well endowed with biomass energy sources but there were a number of financial, business, and awareness barriers preventing the self-sustaining grow of the biomass energy market. Without a functioning biomass energy market, overall CO_2 emissions were likely to continue to grow as a result of demand and dependence on oil and coal in BiH (Project Document pg. 9; 20).

3.2 Development Objectives of the project:

The Development Objective of the project was the "reduction of CO_2 equivalent emissions by an accumulated total of 80,000 tonnes over 15 years, by installing or retrofitting schools with biomass boilers" (Project Document pg. 18). The Project Document also notes additional development benefits, such as job creation, community poverty reduction, and local energy security (pg. 6).

The Project Document outlines the following outcomes under this Development Objective:

- Outcome 1: Market demand for biomass energy is increased
- Outcome 2: Biomass fuel market and supply chain strengthened and expanded, and
- Outcome 3: Policy makers, financial sector, fuel and technology suppliers and niche markets are convinced of benefits and market opportunities for biomass energy

[2] The CEO Request for Endorsement/Approval Document (August 28, 2008).

3.3 Were there any **changes** in the Global Environmental Objectives, Development Objectives, or other activities during implementation?

Although there were no changes made to the objectives or outcomes, the project underwent a substantial redesign following the inception workshop in 2010. First, the project was unable to demonstrate private sector-driven financing mechanisms (i.e. heat delivery contracts) for the biomass boilers. The Laws in the Republic of Srpska[3] prohibited public entities from concluding multi-year heat delivery contracts, and as a result, developing business models for biomass energy systems was not possible. Alternatively, the biomass boilers were funded using a traditional grant-financing scheme.

The second significant change to the project design was the abandonment of nearly all project activities under Outcome 2. Originally, activities under this outcome were to be funded and executed by the UNDP Srebrenica Regional Recovery Program (SRRP) Forestry for Employment Project (Project Document, pg. 14). However, at the time of time of the inception workshop in 2010, the UNDP/SRRP project had already completed the activities planned for under the UNDP-GEF project. The UNDP-GEF project team decided that no further resources should be spent on activities associated with Outcome 2, except for $20,000 for developing biomass fuel certification procedures. It is important to note that while the *activities* envisioned under the UNDP-GEF project were completed prior to start-up, the *results* were not necessarily achieved under the UNDP/SRRP project, specifically: (1) access to investment capital and effectiveness in forest and wood-processing sectors, and (2) sustainable supply of legally harvested timber increased (TE pg. 18).

4. GEF IEO assessment of Outcomes and Sustainability

Please refer to the GEF Terminal Evaluation Review Guidelines for detail on the criteria for ratings.

Relevance can receive either a Satisfactory or Unsatisfactory rating. For Effectiveness and Cost efficiency, a six point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess. Sustainability ratings are assessed on a four-point scale: Likely=no or negligible risk; Moderately Likely=low risk; Moderately Unlikely=substantial risks; Unlikely=high risk. In assessing a Sustainability rating please note if, and to what degree, sustainability of project outcomes is threatened by financial, sociopolitical, institutional/governance, or environmental factors.

Please justify ratings in the space below each box.

4.1 **Relevance**	Rating: **Satisfactory**

The TE provides a rating of "relevant" for this component of project outcomes, which this TER adjusts to **Satisfactory**. The project sought to remove market barriers for biomass energy for heating, hot water, and electricity in rural areas of Bosnia and Herzegovina, which was consistent with the GEF-4 Climate

[3] The Federation of Bosnia and Herzegovina (FBiH) and the Republic of Srpska are separate federal entities. The project pilot areas were in the Republic of Srpska and thus bound to its laws.

Change Focal Area, particularly Strategic Objective 5, *To promote the use of renewable energy for the provision of rural energy services*. Additionally, the project outcomes were consistent with GEF-4 Strategic Program 4, *Promoting sustainable energy production from biomass*.

At the time of the project design, Bosnia and Herzegovina did not have a specific policy or strategy dedicated to renewable energy. However, the project outcomes were consistent with the Midterm Development Strategy, which emphasized environmental protection and energy savings. Additionally, the project outcomes were consistent with the National Environmental Action Plan (NEAP), which proposed energy efficiency measures through technological restructuring, better use of energy resources, maximizing renewable energy, etc. (Project Document pgs. 18-19).

4.2 **Effectiveness**	Rating: **Moderately Satisfactory**

The TE provides a rating of **Satisfactory** for project effectiveness, which this TER downgrades to **Moderately Satisfactory**. The project is highly unlikely to achieve its objective of indirectly reducing CO_2 emissions by 80,000 tonnes over 15 years, however the TE notes that this was a highly unrealistic target. The project did increase market demand for biomass energy, as evidenced by the 20 new or retrofitted biomass broilers installed in public buildings as a direct or indirect result of the project. The project also resulted in an increase in public awareness of biomass energy. It should be noted however, that it is difficult to compare actual and expected results, particularly under Outcome 2, due to the substantial redesign of the project.

A summary of the project's achievements, by outcome, is provided below:

- **Outcome 1: Market demand for biomass energy is increased:**
  Expected results under this outcome included: (1) biomass energy systems procured in education sector (2) model biomass fuel specifications and heat delivery contracts prepared, and (3) business models for the delivery of biomass energy systems improved and replicated. By project end, four new biomass boilers were installed in schools, falling short of the targeted ten boilers. The four boilers were projected to total 3,735 tCO2e in direct emission reductions over 15 years, falling short of the targeted 5,200 tCO2e. Additionally, the project failed to demonstrate new private sector-driven financing mechanisms (i.e. heat delivery contracts), as the laws in the Republic of Srpska prohibited public entities from concluding multi-year heat delivery contracts. As an alternative, the project financed the pilot projects using a traditional grant structure. The project did however, influence the installation or retrofitting of at least 20 biomass boilers in public buildings (TE pgs. 36-37).

- **Outcome 2: Biomass fuel market and supply chain strengthened and expanded:**
  As noted above, activities under this outcome were almost entirely abandoned during the redesign of the project in 2010. Limited resources ($20,000) were dedicated to establishing

biomass fuel certification procedures, however the TE does not report the achievement of any specific results in this area (TE pg. 18).

- **Outcome 3: Policy makers, financial sector, fuel and technology suppliers and niche markets are convinced of benefits and market opportunities for biomass energy:**
  Expected results under this outcome included: (1) baselines are established and reliable data on local costs and benefits of biomass energy is available for policy development work, (2) biomass sector advocacy capacities enhanced, (3) project findings used to inform policy development and building business and finance capacities, establishing conditions for scaling up, and (4) community understanding and acceptance of biomass energy and energy efficiency enhanced through school education program. By project end, baseline awareness surveys were administered, although it is unclear whether reliable data on the local costs and benefits of biomass data was collected. A comprehensive school education program was also undertaken, along with promotional campaigns, workshops, and conferences. The TE notes that high school students demonstrated an average 20% increase in knowledge, whereas workshop participants demonstrated an average 30% increase.

  A Biomass Energy Association was also inaugurated and officially registered in May 2012, although it is unclear whether this institution increased the advocacy capacities of the sector. Additionally, there is no evidence that project findings were used to inform policy development (TE pgs. 39-40).

4.3 **Efficiency**	Rating: **Moderately Satisfactory**

The TE provides a rating of **Satisfactory** for project efficiency, which this TER downgrades to **Moderately Satisfactory**. The GEF CEO approved the project in October 2008, however project implementation did not begin until October 2009 due to slow government administration procedures (2010 PIR, Adjustments, Line 27). The project was designed to operate in tandem with the UNDP Srebrenica Regional Recovery Program (UNDP/SRRP) in order to minimize start-up and operating costs, and to maximize effectiveness (TE pg. 22). However, it became clear at the UNDP-GEF inception workshop that many of the joint UNDP/SRRP activities had already been completed. The TE does note that that the project adapted efficiently to the necessary changes in the project design (pg. 28). The project was ultimately extended to December 2014 in order to complete key results, such as the installation of the biomass boilers (2012 PIR, Adjustments, Line 25). Overall, the TE notes that the project was implemented in a cost-effective manner (TE pg. 42).

4.4 **Sustainability**	Rating: **Moderately Likely**

The TE provides a rating of **Likely** for project sustainability, which this TER downgrades to **Moderately Likely**. Moderate risks that affect sustainability include a lack of concrete government strategies or legal frameworks for promoting biomass energy, in addition to a waning interest in sector advocacy.

Financial Resources

This TER provides a rating of **Likely** for the sustainability of financial resources. The TE notes that the installed and retrofitted biomass boilers are likely to continue operating due to the low cost of wood briquettes (pg. 44). Additionally, several biomass conversion projects have been implemented in the Federation of Bosnia and Herzegovina (FBiH) without direct cost sharing from donors. The TE also notes that there were opportunities for further funding through the ongoing UNDP Green Economic Development Project, and the new follow-up UNDP project, Biomass Energy for Employment and Energy Security (pg. 9).

Sociopolitical

This TER provides a rating of **Moderately Likely** for sociopolitical sustainability. The project invested heavily in raising awareness of biomass energy and energy efficiency, with positive results. Additionally, the installation of additional biomass boilers in public buildings is evidence that stakeholders have an interest in sustaining project outcomes. The TE does note however, that interest in the Biomass Energy Association was waning, with only 5 or 6 stakeholders paying membership fees in 2014 (pg. 30).

Institutional Frameworks and Governance

This TER provides a rating of **Moderately Likely** for the sustainability of institutional frameworks and governance. The TE notes that there were no institutional or governance risks which would affect the operation of the installed biomass boilers (pg. 45). However, at the time of the TE there were no concrete government policies or strategies for promoting biomass energy. The conditions for private sector investment for biomass energy were more favorable in FBiH than the Republic of Srpska, where the legal framework prevented public entities from entering into multi-year heat supply contracts (TE pg. 44).

Environmental

The TE does not provide enough information to assess environmental sustainability.

5. Processes and factors affecting attainment of project outcomes

5.1 Co-financing. To what extent was the reported co-financing essential to the achievement of GEF objectives? If there was a difference in the level of expected co-financing and actual co-financing, then what were the reasons for it? Did the extent of materialization of co-financing affect project's outcomes and/or sustainability? If so, in what ways and through what causal linkages?

Actual co-financing was higher than expected, totaling $2.15 million compared to the expected $1.62 million. It should be noted however, that $1.3 million was contributed for the activities under the UNDP/SRRP project that was completed before the UNDP-GEF project even began, which is misleading. UNDP did contribute $.27 million under the Green Economic Development Program during implementation; as well as $.3 million for the boiler installations and administrative backstopping from the UNDP/SRRP project (TE pg. 33).

Co-financing from the private sector did not materialize, as the company expected to provide co-financing went out of business before the project began (TE pg. 14). However, the project was able to leverage additional co-financing from other bilateral donors such as the Czech government, the Cantonal government, and the Bratunac and Srebrenica municipalities (TE pg. 33). It is likely that the project would not have been able to install the biomass boilers without the additional co-financing.

5.2 Project extensions and/or delays. If there were delays in project implementation and completion, then what were the reasons for it? Did the delay affect the project's outcomes and/or sustainability? If so, in what ways and through what causal linkages?

The project experienced moderate delays at start-up due to slow government administrative procedures. The GEF CEO approved the project in October 2008, however project implementation did not begin until October 2009. The project was ultimately extended to December 2014 in order to complete key results, such as the installation of the biomass boilers.

5.3 Country ownership. Assess the extent to which country ownership has affected project outcomes and sustainability? Describe the ways in which it affected outcomes and sustainability, highlighting the causal links:

Country ownership over the project was moderate throughout project implementation. Country representatives at the state and federal levels actively participated in the Project Board and the Project Advisory Board, approving all important decisions (TE pg. 43). However, the project was executed under a Direct Implementation Modality (DIM), which meant that government agencies were less involved in the implementation of activities.

6. Assessment of project's Monitoring and Evaluation system

Ratings are assessed on a six point scale: Highly Satisfactory=no shortcomings in this M&E component; Satisfactory=minor shortcomings in this M&E component; Moderately Satisfactory=moderate shortcomings in this M&E component; Moderately Unsatisfactory=significant shortcomings in this M&E component; Unsatisfactory=major shortcomings in this M&E component; Highly Unsatisfactory=there were no project M&E systems.

Please justify ratings in the space below each box.

6.1 **M&E Design at entry**	Rating: **Moderately Unsatisfactory**

The TE provides a rating of **Moderately Satisfactory** for M&E design, which this TER downgrades to **Moderately Unsatisfactory**. As the TE notes, there are inconsistencies between the Project Document narrative and the results framework. For example, the Project Document references key results, such as the project's replication potential and indirect emissions reductions, which are not included in the results framework. Additionally, the logic underlying the results framework is weak, particularly for Outcome 2. Rather, the activities and outputs outlined in the framework are not necessary and sufficient to "strengthen and expand the biomass fuel market and supply chain," (TE pg. 19). The indicators provided are of mixed quality, and at times, redundant. For example, the indicator for the project's objective and Outcome 1 is the same. The TE also notes that the end of project targets were in some cases overly ambitious and didn't reflect the realities of the operating environment (TE pg. 19).

The Project Document does provide a general M&E plan, which includes M&E activities (monitoring of performance indicators, annual reviews and reports, and a midterm and final evaluation), responsible parties, and associated costs and timeframes. The M&E plan also indicates that one local and one international expert would be hired to focus solely on project monitoring. However, the formal reviews (Project Steering Committee meetings) would occur on a yearly basis, which seems inadequate for providing sufficient oversight over project performance. The Project Document provides an "indicative M&E budget" of $101,000, however notes that the M&E costs are included in the overall budget and therefore, not additional costs (Project Document, pg. 4). It is therefore unclear whether these funds are actually dedicated for M&E activities.

6.2 **M&E Implementation**	Rating: **Moderately Satisfactory**

The TE provides a rating of **Moderately Satisfactory** for M&E implementation, and this TER concurs. Following the inception workshop, the project's indicators and targets were revised to better reflect the conditions on the ground. The TE notes that an M&E team was formed and that project activities were

well monitored throughout the life of the project (TE pg. 33). In particular, monitoring of the project's awareness raising activities was strong. The TE does note that the project could have done a better job monitoring the actual fuel consumption, heat generation, and related GHG reduction data from the biomass boilers. A report on the "calculation of reduction of greenhouse gas emissions before and after implementation of energy efficiency measures" was forthcoming at the time of the TE, however this was based on theoretical calculations rather than monitoring data from the project. Additionally, it should be noted that the annual project reports were of poor quality, and did not adequately track progress against the indicators (TE pg. 34).

7. Assessment of project implementation and execution

Quality of Implementation includes the quality of project design, as well as the quality of supervision and assistance provided by implementing agency(s) to execution agencies throughout project implementation. Quality of Execution covers the effectiveness of the executing agency(s) in performing its roles and responsibilities. In both instances, the focus is upon factors that are largely within the control of the respective implementing and executing agency(s). A six point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess.

Please justify ratings in the space below each box.

7.1 **Quality of Project Implementation**	Rating: **Moderately Satisfactory**

The TE provides a rating of **Highly Satisfactory** for quality of project implementation, which this TER downgrades to **Moderately Satisfactory**. The original project design was based on a number of assumptions that proved false. For example, the biomass boilers were supposed to be purchased using heat delivery contracts in order to pilot private sector financing mechanisms. However, the laws in the Republic of Srpska prohibited public entities from entering into multi-year heat delivery contracts, which undercut key results under Outcome 1. Additionally, activities under Outcome 2 were supposed to be largely funded and executed by the UNDP/SRRP project (Project Document, pg. 14). However, at the time of the inception workshop in 2010, the UNDP/SRRP project had already completed the activities planned under the UNDP-GEF project. As a result, the original project design had to be substantially revised. The TE notes that the revision process was done in a timely and efficient manner, however these barriers should have been anticipated by UNDP (pg. 28).

The project was implemented by under a Direct Implementation Modality (DIM), which meant that UNDP was directly responsible for executing activities. The TE notes that this implementation arrangement was effective, and that the Project Board and Project Advisory Board provided adequate oversight over project implementation (pgs. 34-35). The TE also notes that UNDP effectively managed

the finances of the project. For these reasons, a rating of **Moderately Satisfactory** is appropriate for quality of project implementation.

7.2 **Quality of Project Execution**	Rating: **Unable to Assess**

As noted above, the project was implemented under a Direct Implementation Modality (DIM), which meant that UNDP was responsible for executing project activities. The executing agency for the project is listed as the Ministry of Foreign Trade and Economic Relations, however it is unclear what role they played beyond participating in the Project Board, which reviewed and approved annual work plans and budgets (TE pg. 34). Therefore, this TER is unable to assess the quality of project execution.

8. Assessment of Project Impacts

Note - In instances where information on any impact related topic is not provided in the terminal evaluations, the reviewer should indicate in the relevant sections below that this is indeed the case and identify the information gaps. When providing information on topics related to impact, please cite the page number of the terminal evaluation from where the information is sourced.

8.1 Environmental Change. Describe the changes in environmental stress and environmental status that occurred by the end of the project. Include both quantitative and qualitative changes documented, sources of information for these changes, and how project activities contributed to or hindered these changes. Also include how contextual factors have contributed to or hindered these changes.

> The TE does not cite any environmental changes that occurred by the end of the project. However, the TE projected that the project would directly contribute to a total of 3,735 tCO2e in direct emission reductions over 15 years (TE pg. 36).

8.2 Socioeconomic change. Describe any changes in human well-being (income, education, health, community relationships, etc.) that occurred by the end of the project. Include both quantitative and qualitative changes documented, sources of information for these changes, and how project activities contributed to or hindered these changes. Also include how contextual factors have contributed to or hindered these changes.

> The TE does not cite any socioeconomic changes that occurred by the end of the project.

8.3 Capacity and governance changes. Describe notable changes in capacities and governance that can lead to large-scale action (both mass and legislative) bringing about positive environmental change. “Capacities” include awareness, knowledge, skills, infrastructure, and environmental monitoring

systems, among others. “Governance” refers to decision-making processes, structures and systems, including access to and use of information, and thus would include laws, administrative bodies, trust-building and conflict resolution processes, information-sharing systems, etc. Indicate how project activities contributed to/ hindered these changes, as well as how contextual factors have influenced these changes.

a) Capacities

The TE notes that by project end, targeted high school students demonstrated an average 20% increase in knowledge of biomass energy, and targeted workshop participants demonstrated an average 30% increase in knowledge (TE pg. 39). The project also helped to establish a Biomass Energy Association, which was inaugurated and officially registered in May 2012 (TE pg. 40).

b) Governance

The TE does not cite any changes in governance that occurred by the end of the project.

8.4 Unintended impacts. Describe any impacts not targeted by the project, whether positive or negative, affecting either ecological or social aspects. Indicate the factors that contributed to these unintended impacts occurring.

The TE does not cite any unintended impacts that occurred by the end of the project.

8.5 Adoption of GEF initiatives at scale. Identify any initiatives (e.g. technologies, approaches, financing instruments, implementing bodies, legal frameworks, information systems) that have been mainstreamed, replicated and/or scaled up by government and other stakeholders by project end. Include the extent to which this broader adoption has taken place, e.g. if plans and resources have been established but no actual adoption has taken place, or if market change and large-scale environmental benefits have begun to occur. Indicate how project activities and other contextual factors contributed to these taking place. If broader adoption has not taken place as expected, indicate which factors (both project-related and contextual) have hindered this from happening.

By project end, the TE notes that the project influenced the installation or retrofitting of at least an additional 16 biomass boilers in public buildings (TE pg. 36).

9. Lessons and recommendations

9.1 Briefly describe the key lessons, good practices, or approaches mentioned in the terminal evaluation report that could have application for other GEF projects.

The TE provides the following lessons learned, or "corrective actions for the design, implementation and M&E of similar projects," (pgs. 46-47):

- For project design, the evaluation highlights the importance of investing adequate resources and time on proper situation analysis even for smaller projects. Typically for medium-size projects, far less resources are available and allocated for project preparation, although from the viewpoint of the identified (or non- identified barriers), the targeted results and complexity, their implementation can be as demanding as of many full-size projects. While many defaults of the initial project design can be compensated by good adaptive management and in most cases this is unavoidable anyway, such actions typically also delay the project implementation and in the worst case can lead to unnecessary waste of resources, which especially for smaller projects with already stretched resources can be quite damaging indeed.

- Inadequate attention on monitoring and reporting has been a weak point in many projects and the evaluated project does not make an exemption in this respect. Although the reported results, for instance, in the annual PIRs may make sense when looked at separately, in most cases they do not address the specific indicators and targets they are meant to, thereby also leading to unnecessary repetition of basically the same results at the project objective and outcome level and in some cases for one outcome after another. As such, greater attention on the concrete monitoring and reporting plan and formats at the project inception and quality control after that going beyond the standard UNDP requirements is recommended.

- Another thing is that in the end, the success of all GHG mitigation projects is measured by the actual GHG savings achieved. Similarly, the local stakeholders may be primarily interested in real verified data on the saved and/or produced energy and related costs savings. For this, a proper monitoring plan of the proposed investment projects would need to developed and agreed upon already during the project design or at latest during the project inception phase. Otherwise, it is easily left without adequate attention until it may be too late. Typically, the compilation of data from the actual measurements requires at least one full year, but preferably several consequent years to balance the eventual annual variations.

- Often the installation of complementary metering equipment is considered just as an unnecessary additional cost item by taking into account the already stretched financial resources of the project, but usually the investment pays back at the time the projects results are expected to be reported to different stakeholders based on real, verified costs savings and/or emission reductions.

9.2 Briefly describe the recommendations given in the terminal evaluation.

The TE provides the following recommendations, or "actions to follow up or reinforce initial benefits from the project" (pgs. 47-48).

- As mentioned before, the project has clearly had a significant impact in increasing the general awareness on and acceptance of biomass energy as a serious and cost-effective alternative to the use of fossil fuels in heating of schools and other public buildings. Several innovative approaches and good practices have also been tested in the schools to start the education of children on energy and environmental issues already at the lowest grades. Based on the discussions and observations during the evaluation mission, however, they may have remained as a "one shot activity" implemented once, but forgotten after that. During the evaluation mission it was not possible to meet any of the teachers that were trained on delivering the classes on energy and environment so as to clarify to what extent the earlier initiatives may have been followed up and/or still used in their current work. The impression from the discussions with the school directors was, however, that if not formally integrated into the school curricula (based on the request of Ministry of Education), the earlier awareness raising activities may not anymore be replicated for new classes and/or the materials prepared used. As such, some further follow up during the remaining project implementation as well as after that could be organized both at the level of the Ministry of Education and Culture and at the schools with the teachers trained on how to make the effort more sustainable.

- The need for strengthening the monitoring of the already installed biomass boilers was discussed with the project management already during the evaluation mission. It was tentatively agreed with the project management that the project seeks to attach still during the remaining project implementation a heat meter into each installed biomass boiler supported with project funds as well as to agree with the school management on recording the meter readings together with the fuel consumption data at agreed regular intervals and reporting them to UNDP. Furthermore, a strategy and implementation arrangements for measuring and reporting the achieved thermal comfort inside the school buildings during the start of heating season should be agreed upon by relying on relatively cheap measurement and data recording instruments. Although the project will formally end in a couple of months' time, the monitoring should be continued as a part of the planned follow-up activities. Correspondingly, the current cost-benefit and GHG reduction analysis can be updated based on the actually monitored data and performance of the pilot projects rather than relying on the initial theoretical design values.

- The original project design included no legal and regulatory component and no such activities were introduced into the project during its implementation either (apart from translating and facilitating the adoption of 5 standards for solid biomass fuel specification and classes). Starting with awareness raising activities is appropriate, but future interventions should gradually start to address also the identified legal and regulatory barriers, One of those barriers is within the current Public Procurement Law of the Republic of Srpska, for which the discussion on the

required amendments to better support new contacting modalities and to leverage financing for investments, which the municipalities may not afford to make at once by themselves, could be initiated.

- Another thing is that the information and conclusions of the project have not really found yet their way to the key policy and strategy documents of the different Government entities such as the Ministry of Education and Culture and the Ministry of Industry, Energy and Mining. The possibilities for further co- operation with the mentioned entities could be explored as a part of the possible follow-up activities of the project. The elements of the possible follow-up support could include required background studies and updated resource assessments, drafting of action plans (or relevant parts of them), design of possible financial and/or fiscal incentives, standards and regulations for quality control of both the hardware and the design works as well as of the different types of biomass fuels sold at the market etc. Furthermore, for the design of fuel-switching projects, some further training and capacity building may be required for optimizing the design and costs and the desired thermal comfort by an integrated demand side energy efficiency and supply side RE approach. All of this is subject to an updated situation analysis and needs assessment, however. These are also areas where opportunities for co-operation with the National Biomass Association may be explored further so as strengthen its existence and eventually broaden its membership base.

- Despite the initial project idea of relying on wood chips as the primary type of wood fuel to be used for heating of municipal buildings, the production of them has not really taken off yet in a larger scale. In the interviews with different stakeholders, to a great extent this was considered to be because of different organizational and institutional barriers, but there are also issues with suitable machinery, available financing options to purchase such machinery by small companies etc., all of which are aspects that eventually could be supported within planned follow-up activities.

- UNDP BiH in general appears to be in an excellent position to continue the effort of promoting the EE and RE agenda in the country with both political entities by maximizing the synergies with its other ongoing projects, The new Green Economic Development (GED) project in particular can be mentioned with partnerships already created with the FBiH Environmental Protection Fund and the RS Environmental Protection and Energy Efficiency Fund for exploring the potential for new financing mechanism. The mutual benefits of co-operation with bilateral donors were already demonstrated during the project implementation and this is worth following up. The planned UNDP follow up project on “Biomass Energy for Employment and Energy Security” would provide an excellent platform to continue to push the bio- energy agenda in particular.

10. Quality of the Terminal Evaluation Report

A six point rating scale is used for each sub-criteria and overall rating of the terminal evaluation report (Highly Satisfactory to Highly Unsatisfactory)

Criteria	GEF IEO comments	Rating
To what extent does the report contain an assessment of relevant outcomes and impacts of the project and the achievement of the objectives?	The report's assessment of outcomes and impacts was adequate. It would have been helpful if the report more clearly articulated the expected results for comparison with actual results, especially given the substantial redesign of the project.	**MS**
To what extent is the report internally consistent, the evidence presented complete and convincing, and ratings well substantiated?	The report is internally consistent and the evidence reported is complete in most areas, however the ratings are moderately inflated.	**MS**
To what extent does the report properly assess project sustainability and/or project exit strategy?	The report provides information on sustainability, however its ratings are moderately inflated. Additionally, more information could have been provided on environmental sustainability.	**MS**
To what extent are the lessons learned supported by the evidence presented and are they comprehensive?	The lessons learned are supported by the evidence presented, however they were confined to project management and didn't adequately address the project's overall programmatic strategy. Additionally, it was difficult to delineate between a "lesson learned" and a "recommendation."	**MU**
Does the report include the actual project costs (total and per activity) and actual co-financing used?	The report provided the actual project costs and actual co-financing used. Additionally, the report indicated what activities each co-financer contributed to which was very helpful.	**HS**
Assess the quality of the report's evaluation of project M&E systems:	The report satisfactorily assesses the M&E design and M&E implementation.	**S**
Overall TE Rating		**MS**

11. Note any additional sources of information used in the preparation of the terminal evaluation report (excluding PIRs, TEs, and PADs).

The CEO Request for Endorsement/Approval Document (2008)