Terminal Evaluation

of the UNIDO-supported, GEF-financed project

"Biomass energy for productive use for small and medium enterprises (SMEs) in the olive oil sector"

Final Report

16 November 2021

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SYNOPSIS

Project Title: Biomass energy for productive use for small and medium enterprises (SMEs) in the olive oil sector

UNIDO Project ID: 120536

GEF Project ID: 5342

Final Evaluation time frame: May-September 2021

Date of Terminal Evaluation report: October 2021

Region and Countries included in the project: ECA - Albania

GEF Focal Area Objective: CC-3; Electricity and heat produced from renewable sources

Implementing partner and other strategic partners: Ministry of Tourism and Environment (MoTE); Ministry of Infrastructure and Energy (MEI); National Agency for Natural Resources (NANR); Ministry of Agriculture and Rural Development (MoARD); Albanian Association of Olive Oil Producers (AAOOP)

Terminal Evaluation team members: Mr. Andreas Karner, International Consultant; Mr. Abdullah Diku, National Consultant.

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Abbreviations

APR	Annual Progress Report
BET	Biomass Energy Technology
CBO	Community Based Organisation
CO_2	Carbon dioxide
CSO	Civil Society Organization
EE	Energy Efficiency
EOP	End of Project
ER	Emission Reductions
GoA	Government of Albania
GEF	Global Environment Facility
GHG	Greenhouse Gas
IPCC	Inter-Governmental Panel on Climate Change
kWh	Kilowatt-hours
M&E	Monitoring and Evaluation
NGO	Non-governmental Organization
PSC	Project Steering Committee
PIMS	Project Implementation Management System
PIR	Project Implementation Report
PMU	Project Management Unit
SDC	Swiss Agency for Development and Cooperation
t	tonnes
TE	Terminal Evaluation
TOR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change
UNDAF	United Nations Development Assistance Framework
USD	United States Dollar
Yr	Year

Executive Summary

I. Project Information Summary

Table 1: Project Information Summary (as of end June 2021)

Project Title Biomass energy for productive use for small and medium enterprises (SMEs) in the olive oil sector			
UNIDO Project ID (PIMS #):	120536	GEF Project ID (PMIS #):	5342
Country:	Albania	Region:	Europe & Central Asia
Focal Area:	Climate Change	CEO Endorsement date:	21 August 2014
GEF Focal Area Strategic Objective:	CCM-3	Planned closing date:	30 June 2020
Trust Fund [indicate GEF TF, LDCF, SCCF, NPIF]:	GEF TF	Actual closing date:	30 June 2021
Executing Agency/Implementing Partner:	Ministry of Tourism and Environment		
Project Financing	at CEO endorsement (USD)	at Completion (USD) *)	
[1] GEF financing:	927,000	927,000	
[2] UNIDO contribution:	100,000	100,000	
[3] Government:	1,360,000	1,360,000	
[4] Other partners:	3,047,000	3,169,000	
[5] Total co-financing [2 + 3+ 4]:	4,507,000	4,629,000	
PROJECT TOTAL COSTS [1 + 5]	5,434,000	5,556,000	

*) status: June 2021

II. Scope and purpose of the Evaluation

The Terminal Evaluation (TE) is being conducted on a request of UNIDO HQ in Vienna; it is a key element of standard project monitoring and evaluation procedure under UNIDO-supported, GEF-financed projects.

The UNIDO Independent Evaluation Division (ODG/EIO/IED) is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Evaluation is an assessment, as systematic and impartial as possible, of a programme, a project or a theme. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. ODG/EIO/IED is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

The terminal evaluation (TE) will cover the whole duration of the project from its starting date up to the date of the evaluation. It will assess project performance against the evaluation criteria: relevance, effectiveness, efficiency, sustainability, and impact.

The TE has an additional purpose of drawing lessons and developing recommendations for UNIDO, the Government, Donors, and the project stakeholders and partners that may help improving the selection, enhancing the design and implementation of similar future projects and activities in the country and on a global scale upon project completion. The TE report should include examples of good practices for other projects in the focal area, country, or region.

The overall purpose of the TE is to assess whether the project has achieved or is likely to achieve its main objective, i.e. to increase the use of bio-energy technology applications for the production of energy in the olive oil industry through successful application in target enterprises and to what extent the project has also considered sustainability and scaling-up factors for increasing contribution to sustainable results and further impact.

The evaluation has three specific objectives:

i. Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability and progress to impact;
ii. Identify key learning to feed into the design and implementation of the forthcoming projects; and
iii. Develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

III. Brief description of the Project

UNIDO in cooperation with the Government of Albania, has been implementing the GEF-5 funded project on demonstrating the use of biomass for energy production in the olive oil industry, targeting and engaging SMEs in the initiatives that promote the use of innovative and environmentally friendly energy technologies. Setting up the market environment that allows and promotes the use and replication of bio-energy technologies was expected to lead to significant greenhouse gas emission reductions and help Albania in its transformation towards low carbon development.

The UNIDO-GEF Project had the following goals and objectives:

- **Project Goal**: transform the market for using organic waste from the olive oil and other industries for energy production. The Project aimed to achieve this through triggering investment in organic olive and other industry waste-to energy projects, through market demonstration, development of appropriate financial instruments, capacity building and by strengthening the policy and regulatory environment.
- **Project Objective:** to increase the use of bio-energy technology applications for the production of energy in the olive oil industry through successful application in target enterprises.

The Project was designed to implement three components that were expected to generate outcomes that, when achieved, will realize the Project Objective. Moreover, the Project was expected to deliver certain outputs that would help to achieve the desired outcomes. The outcomes are enumerated below:

- **Outcome 1**: Increased utilisation of industrial biomass waste for energy purposes through technological innovation to trigger transformation of the olive oil industry;
- **Outcome 2**: Strengthened capacities on the application of modern biomass technologies for key actors in the policy and industrial sectors in the olive oil and other sectors with high replication potential;
- **Outcome 3**: Detailed assessment of the biomass potential for industrial uses and the way forward for replication developed;
- **Outcome 4**: Pipeline of project for replication developed and supportive regulatory environment created.

Before the project started for the poorest people the opportunity to overcome the development divide strongly depended on the possibility to access energy to transform their products and develop the local economy. In this context, renewable energies, in particular through distributed generation, represented an opportunity for local populations to cover their energy requirements, create employment and income generation without destroying the environment.

The project was based on the approach to engage the private sector, facilitating sustainable industrial development and strengthening the policy framework to enable an anchorage in national institutions and hence to foster economic growth. By working closely with SMEs, national ministries, partner agencies, academia, industrial associations, financial institutions, potential investors and autonomous research centers in the country and abroad, the project was supposed to establish an effective awareness campaign and platform to mobilize interest among targeted beneficiaries and ensure an increased use of biomass energy in industrial sectors.

The implementation of Project actually commenced in June 2016 and terminated in June 2021, including several extensions (refer to section 2.2.1 for further details).

IV. Project Evaluation Rating

The following table summarises the project performance considering the overall project design, implementation, results and outcomes achieved and comes up with an overall rating. For details on the justification of rating refer to sections **Fehler! Verweisquelle konnte nicht gefunden werden.** and 0 of the report.

Table 2: Project Evaluation Rating

Measure	EOP Rating	Achievement Description
Project Design	Rating: **Satisfactory**	Principally all the project stakeholders expressed their straightforward conformance with the adequacy of the project design towards promoting application of biomass energy technologies in the agro-industrial sector in Albania. However, high number of project indicators and some of the outcomes/outputs are not designed "SMART".
Relevance	Rating: **Highly relevant**	Relevance is in line with Global as well as National priority towards acquiring a greater and relatively significant share of renewable energy dependent growth and competitiveness of the industrial sector, especially for the promotion of biomass.
Effectiveness	Objective Achievement Rating: **Highly Satisfactory**	The overall project target in terms of GHG emission reductions and investment triggered into innovative biomass energy technologies has been achieved.
	Outcome 1 Achievement Rating: **Highly Satisfactory**	The Increased utilisation of industrial biomass waste for energy has resulted in 14 installations been implemented in the olive oil industry, with a total investment of 3.17 mln USD, leading to a direct lifetime GHG emission reduction of 275,804 tCO_{2eq}.
	Outcome 2.1 Achievement Rating: **Highly Satisfactory**	Strengthened capacities in the application of modern biomass technologies for key actors in the policy and industrial sectors in the olive oil and other sectors with high replication potential has resulted in >250 persons being trained and capacitated throughout the project (thereof ~45% women). In addition, the awareness of market actors (private enterprises) was increased, which finally led to 40 biomass energy projects being developed (of which 14 have been implemented so far).
	Outcome 2.2 Achievement Rating: **Satisfactory**	The project replication strategy is available from the "Report on strengthening institutional capacities", covering policy requirements (e.g. setting national goals for industrial biomass development), elaboration of a Roadmap on Biomass Energy Technologies, introducing policy monitoring and application of risk mitigation measures towards biomass projects. However, the given strategic directions require uptake by the GoA after the EOP.
	Outcome 2.3 Achievement Rating: **Satisfactory**	Pipeline of project for replication developed and supportive regulatory environment created. No. of policies in place to promote biomass to energy in Albania; however, many amendments have to be integrated into the legislation still.
Efficiency	Rating: **Highly satisfactory**	Project expenditures achieved reflect achievements and follow almost to full extent the results framework's targets. The project has succeeded in securing more co-financing means from private sector and local banks than initially foreseen.

Measure	EOP Rating	Achievement Description
Impact	Rating: **Likely**	Given its focus on addressing policy and technical capacity barriers, this project will generate the biggest share of GHG emission savings after the project implementation period. However, considering the project objective indicators having been met, the impact is rated likely.
Sustainability	Rating: **Moderately likely**	Technology and operations risk remains manageable, the technical sustainability of the Biomass Project is rated as likely (L) Institutional/political developments considered to a large extent progressing but still under development, the Project is rated Moderately Likely (ML) on institutional sustainability. Financial sustainability of the BET project is rated as Likely (L). Environmental benefits are obvious in terms of use of residues from agricultural production and the valuation of former considered wastes as resources that will allow their productive use and simultaneously lead to a reduction of greenhouse gas emissions across the country. Environmental sustainability of the Project is rated Likely (L).
Project implementation arrangements	Rating: **Highly Satisfactory**	Overall conclusion is that the project management has achieved appropriate partnerships with relevant national stakeholders (ministries, private sector, financing sector) and participation of these national stakeholders is visible throughout the whole project and beyond. Governmental stakeholders have supported the objectives of the project and were involved in strategic decision-making and setting directions through the PSC.
Monitoring & Evaluation	Rating: **Satisfactory**	A detailed plan for the monitoring of GHG emission reductions was not in place and therefore happened only in the course of the final evaluation of the project. However, the project activities and results were continuously monitored within the PSC meetings and throughout ongoing information exchange among project partners. Considering the fact that objective indicators at objective and outcome level have been achieved, the M&E plan implementation is considered to be Satisfactory.
Gender mainstreaming	Rating: **Satisfactory**	All in all, the project interventions have helped to contribute to better gender equality and gender-related dimensions, with significant involvement of women throughout the activities. Gender mainstreaming is considered to be Satisfactory.

V. Conclusions

- **The overall rating of the Project at EOP stage is Highly Satisfactory. The Project has achieved its objective targets and most of the outcomes where over targets.** The only minor shortcomings refer to outcomes 2.2 and 2.3 and the follow-up required in integrating several pieces of policies related to biomass energy technology, e.g. heating, into relevant amendments.
- **The Project is considered 'Relevant'** since it is in line with Global as well as National priorities towards acquiring a greater and relatively significant share of renewable energy dependent growth and competitiveness of the agricultural industry. The project is in accordance with the national strategy that is already in place to promote renewable energy and especially biomass for energy use through regulatory and institutional support measures. Various representatives from government, manufacturers/suppliers,

banking/financing and technical institutions, industry associations affirmed high relevance of the project to the evaluation team.

- **The Project is Appropriately Designed** on its objective, its activity components and relating intended outcomes, to ensure the coverage of main aspects required to achieve the overall development objective in the allotted time frame. It has some shortfalls related to the design of the project results framework, including the high number of indicators (42 in total), the end-of-project targets were not always consistently described or designed SMART, and the monitoring of GHG emission reductions, which was not properly looked after during project implementation.
- **The project has been overall professionally managed and administered and has delivered its results.** It has also proved adaptive management capacity, since it had to deal with several delays on the implementation from the very beginning, which resulted in the more than 2 years delay. Overall conclusion is that the project management has achieved appropriate partnerships with relevant national stakeholders (ministries, private sector and financing sector) and participation of national stakeholders has been visible throughout the whole project. Governmental stakeholders have supported the objectives of the project and were involved in strategic decision-making and setting directions through the PSC.
- **The likelihood of the Project achieving its expected impact is Likely (L).** Given its focus on addressing policy and technical capacity barriers, this project will generate the biggest share of GHG emission savings after the project implementation period, when the National Energy Strategy, new policies and secondary legislation would be in place, capacity further built, to deploy their full impact resulting in new biomass energy projects.
- Taking into consideration the prevailing risks and the mitigation strategies to be considered by the Project, the **sustainability prospects are rated Moderately Likely**. Factors affecting sustainability in the long-term are a fully supportive policy and institutional framework being in place and continued focus on industrial sectors' needs (awareness, capacity, financing models, standards). From a technological and financial point of view the risk is considered to be low, since it was demonstrated that biomass energy technologies can be implemented in the agro-industry under commercial conditions, although the demonstration projects were implemented with a significant contribution of grant money (50% of costs).
- **The achievement of impacts by the Project is contingent to achievement of the demonstration and market development/replication components.** The level of investment facilitated through the project was at least 3.17 million USD, from which 1.37 million USD have been cash resources mobilized by the private enterprises in addition to approx. 1.8 million USD provided as loans from the local banks. The grant leverage ratio was therefore approx. 3:1. The impact on greenhouse gas emission reductions is significantly higher than initially planned – in total, the lifetime CO_2 savings have been calculated at approx. 275,000 tonnes over 20 years.
- **The project has worked continuously and closely during the last five years with olive oil companies, biomass pellet boilers suppliers, together with the GoA and UNIDO and four important Banks in Albania**: BKT, Credins Bank, ProCredit Bank Albania, Intesa Sanpaolo Bank and Albanian Institutions for the promotion of olive pomace including wood processing, wine production and jam-fruit production. In particular, the project served to prepare energy audits, TA for project feasibility/design, business plan development, and projects to be made ready bankable and financed by commercial banks.
- **As a result, ~15 olive oil companies have made actual investment plans for exploiting olive oil production and intending to use the olive pomace as a local renewable resource against the import of diesel and investing in state-of-the-art technologies.**

VI. Recommendations

- The National Energy Sector Strategy 2030 and National Renewable Energy Action Plan 2018-2020 serve to guide Albania's energy sector. A comprehensive plan that aggregates energy sector data such as renewable energy, energy resource potentials and historical statistical trends, together with qualitative and quantitative information, into a clearly formulated and evidence-based development document will allow for sound decision-making and sector development.
- A dedicated renewable energy agency could inform the co-ordinated development of renewables in line with national and international targets and obligations.
- Awareness raising and the provision of information on the available renewable energy options, incentives and support programs can advance the perspectives of energy consumers and consequently renewable energy uptake.

- Sustainable management of biomass resources are not yet fully mainstreamed into government policies. It is recommended to draft new policies to address environmental and sustainability issues within the agro-food sector.
- Enhancing value added to export products at the company level would require business support services in areas relevant to enhance value added (e.g. productivity, packaging, and marketing). The Agriculture and Rural Development Agency announces calls for applications under the IPARD Programme from the Instrument for Pre-Accession Assistance (IPA) for Rural Development (IPARD) with the aim of approving Grants to develop Agro Food Sector. Moreover, EBRD's Green Economy Financing Facility (GEFF) supports homeowners wishing to invest in green technologies. These initiatives would address the problem of access to finance for industrial upgrading.
- Lack of expertise prevents SMEs to fully take advantage of the development potentials of the sector through a high value-added, international high-end market driven export development strategy. This requires strengthening partnerships, improving innovation, product quality, certifications and productivity.
- Albania has available high renewable energy potential, but their applications are partially or not implemented at all; agro-industry is an important sector due to its residue potential suitable for renewable energy production. The olive oil and fruit processing sectors are the most important producers of solid wastes which can be used as fuel. There is low public awareness on the use and production of pellets; which should be targeted through workshops and awareness campaigns.
- In addition, the positive impacts on the GHG emission balance of the country shall be visualized and better promoted. One of the few weaknesses spotted in this project was that communication (reports, publications) did not highlight the positive impact of renewable energies on reducing CO_2 emissions, because it was also not properly monitored throughout the project (only at the end when requested by this TE). A more proactive communication of performance indicators, including primary energy savings from fossil fuels as well as reduced GHG emissions, is recommended.
- Establishment of a modern quality information system and its implementation require the creation of an incentive program and an efficient monitoring system. Uniform and clearly defined quality criteria as well as standardized specifications for the planning and construction of biomass heating plants will lead to a significant improvement in quality and thus to increased efficiency of new plants. The accompanying quality control during the planning, construction and operation of biomass installations could be introduced similarly to other countries (e.g. Austria – Quality Management System for Biomass Heating and District Heating Plants), with a pre-condition for financing support. Supporting of renewable energy markets through subsidies for renewable energy technologies to spur emerging markets may mitigate technical risks and become more effective by incorporating Quality Assurance (QA) requirements.
- The government incentives to support the technology and industrial processing of the bio-energy are crucial for the development of economy and environmental protection; so is the creation of the Energy Efficiency Fund that would support energy efficiency investments. In this respect, a financial support such as 10% tax reduction for all enterprises producing and selling biomass pellets or briquettes in Albanian market is recommended for promoting the penetration of biofuels.
- UNIDO should continue to seek high levels of co-financing as a means to achieve greater environmental impact and to encourage country ownership, since co-financing plays a critical role in creating strong partnerships on the ground. National governments and the private sector have a strong role in providing significant co-financing.

VII. Lessons Learned

- Agro-industries in Albania, especially in the olive oil and fruit processing sectors, produce large quantities of biomass residues that can be used as fuels. Before the launch of this UNIDO-GEF project, there was little public awareness on the production and possible uses of pellets as fuels. The organization of site visits and workshops to reference projects helped raise awareness.
- Since there was no equipment available in Albania, it had to be imported. A key for success is that the imported equipment must be fully proven and reliable, i.e. certified according to international technical standards. Training programs must continue to make sure that the new equipment is properly operated.

- The legislation must be further adapted to include equipment quality and efficiency requirements. Therefore, it is recommended to establish and implement a QI system, with an incentive program, a monitoring system and the necessary infrastructure, including testing, certification, accreditation and mechanisms for market surveillance.
- Practitioner training should include the training of key stakeholders on (a) best international standards (b) the new regulatory framework, and (c) standards and certifications for technical staff of public entities in charge of formulating the policy and regulatory framework.
- The experience gained in the project design, implementation and operation will provide increased experience in the Albanian market and attract other companies in that field or similar industries to use biomass residues for energetic purposes in the future. Especially the olive oil industry in Albania is expecting a huge growth in the local production facilities and productivity (estimation: annual olive production to increase from ~100,000 tons in 2020 to about 800,000 tons in 2030). With that increase in mind, the impact of the project on the national energy balance and energy produced from the amount of biomass residues is expected to grow in an equivalent manner.
- Waste treatment technologies aimed at energy recovery may represent an interesting alternative for a sustainable disposal of residues from olive oil production, able to reduce the environmental impact and to generate heat energy for sale or satisfy the needs of olive mills. The residual biomass of olive processing with potential energy use is classified in two groups. The first group is constituted by residual biomass produced during olive tree culture (pruning and harvest residues). The second group is constituted by residual biomass produced during the various stages of olive oil extraction. Depending on the extraction system the available energy from the by-product is different. The by-product of both groups present, from an energy point of view, favourable aspects in their use are ensured annual production, relative concentration in a place, proper humidity conditions, low sulphur content, and other harmful emissions, and finally, high thermal value. However, an appropriate technology must be employed to avoid the production of pollutants and other problems, while maximizing process efficiency. This leaves potentials for further research and future applications in that promising technology for the local market.
- Development and implementation of projects in the field of renewable energy requires an adequate education system on renewable energy. In Albania the education system on renewable energy comprises the secondary, high schools and universities. Renewable energy as a concept, module, lectures or part of master courses is included in several study programs and universities. The main universities that offer modules and study programs on renewable energy are Agricultural University of Tirana (AUT), Polytechnic University of Tirana (PUT) and University of Tirana (UT). With the support of the project, new curricula have been developed on renewable energies providing the ground for continued education in the academic field, which is required a necessary precondition for educating and training specialists in the field of renewable energy technologies.

1 Introduction

1.1 Scope & Methodology

The Monitoring and Evaluation (M&E) policy at the project level in UNIDO-GEF projects has generally four objectives:

- to monitor and evaluate results and impacts;
- to provide a basis for decision making on necessary amendments and improvements;
- to promote accountability for resource use; and
- to document, provide feedback on, and disseminate lessons learned.

The methodology used for the project terminal evaluation is based on the *UNIDO Monitoring & Evaluation Policies* and includes following key parts:

I. Project documents review prior to the evaluation mission
II. Evaluation Criteria Matrix formulated, providing a set of questions to evaluate the relevance, effectiveness, efficiency, sustainability and impact of the Biomass Albania project. The questions provided in Annex 2 were used for guidance during the stakeholder interviews.
III. Evaluation mission and on-site visit (conducted in June 2021), interviews with project management, UNIDO, project partners and stakeholders, as well as with beneficiaries and independent experts.
IV. Drafting the TE report and ad-hoc clarification of collected information/collection of additional information
V. Circulation of the draft TE report for comments
VI. Finalizing the report, incorporation of comments

Achievements of project objectives have been rated in terms of the criteria above at a six-level scale as follows:

- Highly satisfactory (HS) - the project has no shortcomings
- Satisfactory (S) - minor shortcomings
- Moderately satisfactory (MS) - moderate shortcomings
- Moderately unsatisfactory (MU) - significant shortcomings
- Unsatisfactory (U) - major shortcomings
- Highly unsatisfactory (HU) - severe shortcomings.

1.2 Structure of the Evaluation

This evaluation report is presented as follows:

- An overview of project achievements from the commencement of operations in October 2014;
- An assessment of project results based on project objectives and outcomes through relevance, effectiveness and efficiency criteria;
- Assessment of sustainability of Project outcomes;
- Assessment of monitoring and evaluation systems;
- Assessment of progress that affected Project outcomes and sustainability; and
- Lessons learned and recommendations.

This evaluation report is designed to meet GEF's "Guidelines for GEF Agencies in Conducting Terminal Evaluations, Evaluation Document No. 3" of 2008:

http://www.thegef.org/gef/sites/thegef.org/files/documents/Policies-TEguidelines7-31.pdf

The Evaluation also meets conditions set by the UNIDO Office of Evaluation and Internal Oversight (OFG/EIO) https://www.unido.org/resources/evaluation-and-internal-oversight.

2 Country and Project Background

2.1 Brief country context

2.1.1 Country profile

Albania is an upper middle-income country located in south-eastern Europe, bordering the Adriatic Sea and Ionian Sea, between Greece to the south and Montenegro and Kosovo to the north. The country has a population of 2,866,376 inhabitants with a surface area of 28,748 km2 and a coastline of 362 km.

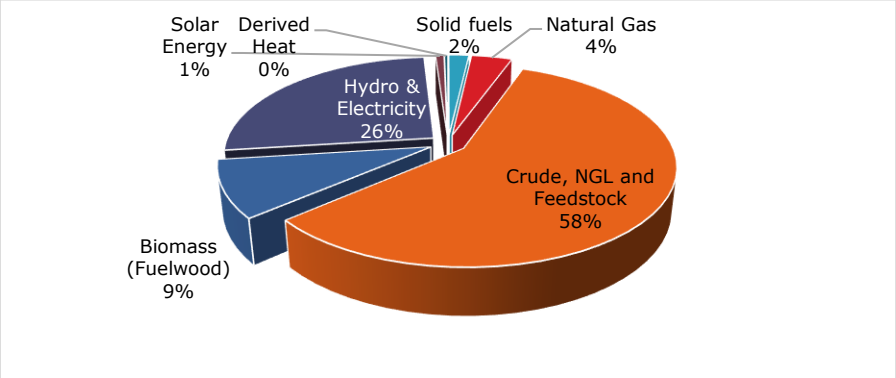
Albania’s energy mix is dominated by fossil fuels – mainly crude oil – which account for more than half of total primary energy supply. However, domestic production is not able to meet demand and Albania is on average a net energy importer. Hydropower accounts for the largest share of the country’s electricity generation, representing around 95% of the Albania’s installed power capacity. Albania’s energy mix has one of the highest shares of renewable energy in Southeast Europe; however, it is also highly dependent on annual rainfall. The consequent vulnerability to climatic externalities for electricity production creates notable fluctuations in domestic energy production.

Aside from the socio-economic implications of its extensive reliance on hydropower, Albania is among the most vulnerable of South-East Europe’s countries to climate change, according to the World Bank, and changing weather patterns have already resulted in increased temperatures, decreased precipitation and more frequent extreme events such as floods and droughts. Establishing energy security, energy sector sustainability and an ensured energy supply at cost-competitive prices are therefore some of the key challenges for the country to address in the near term. These challenges can be met by further increasing the share of renewable energy in the national energy mix and diversifying the country’s electricity sector.

The Renewable Energy development is based upon Albania’s obligations as a Contracting Party to the Energy Community Treaty to transpose and comply with the EU Directives on the promotion of the use of energy from renewable sources. Albania is a special case because domestic energy production is provided mainly by the use of big and medium hydropower plants. Also, about 10-13% of the Total Energy Primary Resources (TEPR) in the country – including the imports – is ensured by biomass, and especially from the firewood.

A total of 36 power plants were installed with a total capacity of 74.3 MW and a total production of 83 GWh. The total production of the country has been at the level of 5.2 TWh, with a decrease of about 40% compared to 2018. While the import of electricity has been at approx. 2.4 TWh, nearly 57% of this output was generated by the Public Generation Company, the remaining 43% were generated by private concession plants. In 2019, there has also been an increase in electricity production from photovoltaic plants. In that year, 8 PV plants have produced electricity, with a total installed capacity of about 15 MW and a total output of approx. 23,000 MWh. The demand for electricity in 2019 reached the value of approx. 7.7 TWh, with a slight decrease in electricity consumption in the country by 0.3% compared to 2018.
In the figure below the gross inland energy consumption is presented (in ktoe) by different types of energy sources.

Figure 1: Albania's Gross Inland Energy Consumption – 2019, in ktoe



Regarding production and use of bioenergy, the consumption was about 160 ktoe, from which about 120 ktoe in the residential sector and others like industry and agriculture approx. 40 ktoe. There is no biogas production in the country. Biofuels in transport is used in the range of 10-15 ktoe/year.

2.1.2 National legal context of energy policies

The energy sector is recognized by the Government of Albania as a very important strategic sector for the nation's economic development. Albania has adopted an Integrated Planning System (IPS) to provide a set of operating principles for facilitating coordinated, coherent and integrated government policy planning. A key feature of the IPS is the second National Strategy for Development and Integration (NSDI-II) which describes the national social, democratic and economic development objectives for the period 2015-2020.

Significant developments have been ongoing in order to advance Albania's energy sector governance and meet the targets. Thus, the National Renewable Energy Action Plan (NREAP) for the years 2015-2020 was approved by the Council of Ministers on 20 January 2016 which outlines a plan to reach the 2020 target of 38% of final energy consumption to come from renewable energy sources. With respect to Energy Efficiency (EE), the landmark Law on Energy Efficiency (Law 124/2015) was adopted in November 2015 which transposes many of the requirements of Directive 2012/27/EU, the Energy Efficiency Directive (EED). Together these primary laws provide the foundation upon which a more complete regulatory framework can be built, the institutional structure and financing support are to be established, and the measures in the new NEEAP to be successfully implemented.

Law no. 9876, dated 14.2.2008 "On the production, transport and marketing of biofuels and other renewable fuels for transport" which was compiled in accordance with Directive 2003/30, replaced by requirements of Directive 2009/28. The law aims to contribute to the fulfilment of the commitments undertaken, under the Kyoto Protocol on climate change, as well as to ensure the supply and promotion of renewable energy sources, through the promotion and cultivation of energy plants, to protect the environment. This law includes provisions that aimed supporting the use of fuels from renewable sources in transport sector but has not been implemented as required in practice. This is because the by-laws that should have been issued to enable the implementation of this law have not been adopted and consequently the objectives set out in it have been impossible to achieve.

Law no 138/2013 on "Renewable Energies" stipulating the use of renewable energy sources. The main aim of this Law is to promote the use of the renewable energy sources for generation, electric energy or thermal energy. Moreover, the law contributes to help private initiatives to efficiently invest in renewable energy field. The law aims to support the renewable energy development in all economic sectors including industrial sectors, and attract foreign investment in the Renewable Energy sector. The Renewable Energy Law also includes: i) the legislative framework for the promotion of electricity generated from renewable energy sources; ii) setting of the mandatory national targets for the overall share of energy from renewable sources in gross final consumption of energy; setting the priority connection and access to the grid systems of electricity generated by installations using renewable energy sources; iii) defining the priority for the purchase and payment for such electricity by the renewable energy off-taker; iv) defining the secondary legal basis for streamlining authorization, licensing and

permission requirements for Renewable Energy plants; v) establishing the rules relating to Guarantees of Origin, streamlining licensing and permission requirements. The Law transposes the EU Directive 2009/28/EC "On the promotion of energy use from renewable resources" into national law. Since Albania is a Contractual Party of the Energy Community Treaty is requires the compliance with major parts of European Energy law.

Law no 124/2015 on "Energy efficiency". The purpose of this law is: (a) drafting national rules and policies to promote, promote and improve the efficient use of energy, with the aim of saving energy and increasing security of supply, as well as removing barriers in the energy market; (b) setting national energy efficiency targets;… This law regulates the relations between state authorities and natural and/or legal persons, public or private, operating in the residential, service, industry, transport, agriculture, as well as all other sectors of the economy, in order to promote the use of energy efficiency and market development for energy services. This law replaced the Law on Energy Efficiency, law no. 9379, dated 28.04.2005.

The Law no 116/2016 "On Energy performance in buildings". This law aims to create the legal framework for improving the energy performance of buildings, taking into account the local and climatic conditions of the country, the conditions of internal comfort of buildings, as well as cost-effectiveness. This Law aims the improvement, in reduction of the energy consumption in buildings. This law replaced the **Law no 8937 on heat saving in buildings.**

Law no. 43/2015 on Electricity sector[1], amended. The purpose of this law is to guarantee a stable and secure supply of electricity to customers, through the creation of a functional and competitive electricity market, taking into account the interests of customers, security and quality of electricity supply service and environmental protection requirements. In the article 3/5 in law is mentioned…" Renewable energy sources "are non-fossil renewable energy sources, such as wind, solar energy, aero-thermal energy, geothermal energy, hydrothermal and ocean energy, hydropower, biomass, gas obtained from landfill, gas obtained from plants wastewater and biogas treatment, as defined in the legislation in force on renewable energy sources". This law was amended with the law no 7/2018 date 15.02.2018.

Law no. 7/2017 on "Promotion of use Energy from Renewable Sources"[2] (which replaced the Law no 138/2013 on Renewable Energies of 2013). The purpose of this law is: (a) to promote the increase of energy production from renewable sources in order to ensure a sustainable development in the Republic of Albania in accordance with the obligations under the Energy Community Treaty; (b) to reduce the import of organic fuels, the emission of greenhouse gases and to protect the environment, in accordance with the obligations of the Republic of Albania, in the framework of international agreements and treaties; (c) promote the development of the electricity market from renewable sources and its regional integration; (d) to increase the diversification of the use of energy sources and the security of energy supply in the Republic of Albania; (e) to promote rural development and isolated areas, by improving the energy supply of these areas.

DCM No. 418, date 27.5.2020 on Strategic Waste Management Policy Paper 2020-2035. The Strategic Policy Document is the main planning document in the field of municipal, non-municipal and hazardous waste management in Albania and covers the period 2020-2035. This strategic document takes into account the planning and infrastructural developments in the waste sector since 2011, at the central and local government levels, the large involvement of private business and the numerous investments made at the level of waste collection, transfer and especially waste treatment. The revised Strategic Policy Paper on Integrated Waste Management is developed on the vision or perception of the "zero waste" concept, so that waste is collected and treated as a subject. The management should be done in accordance with the concept of systems of circulating economies, in the service of the use of criteria and conservation of raw material resources. Based on that document, it turns out the biomass potential used by fruit trees, throughout the country, is estimated to be around 50,000 tons / year.

National Energy Strategy for the period 2018-2030, approved by the Albanian Council of Ministers Decision - DCM no. 480, dated 31.07.2018. Some of the main pillars of this document include; (i) Reduced energy imports and increased energy domestic production to meet the future energy demands of the country, (ii) Improved energy efficiency in the household, services and industrial sectors, (iii) Increased utilization of RES technologies, based on

[1] This law is fully aligned with Directive 2009/72 / EC of the European Parliament and of the Council of 13 July 2009

[2] This law is partially aligned with Directive 2009/28 / EC of the European Parliament and of the Council of 23 April 2009 on promoting the use of energy from renewable sources

least cost planning and environmental protection principles, (iv) Improved alignment and integration of the Albanian energy sector legal framework with the EU's energy *acquis* with the regional and EU energy markets, (v) Development of a more consumer-oriented and decentralized future Albanian energy system. Albania has substantial biomass potential from agricultural residues, estimated at 2,300 GWh /year. Space heating with renewable energy sources is, currently provided by inefficient use of firewood, but more modern forms of renewable energy are being promoted, mainly by the introduction of solar water heating systems, the utilization of agro-processing waste for heat generation and the use of residual crops for generating heat in green houses. Implementation of this Energy Strategy will increase the security of energy supply for the Albanian consumers and continue the progress towards greater integration of the Albanian energy market into the regional and European markets.

A detailed analysis and **assessment of national regulation on renewable or bioenergy production** and management was performed within the project in order to detect the missing parts in the regulations (if any) by comparing them to successful European frameworks (such as the German biogas regulation).

2.1.3 Problems that the project sought to address

The industrial sector in Albania has a significant proportion in Albania's total energy consumption. In 2018, the sector consumed 15.6% of total final energy, the transport sector 39.5%, the residential sector 24.2%, the services sector 9.4% and the agriculture sector 11.3%. The food industry (including olive oil production and other fruit processing) contributes 40 to 45% to the GDP of the industrial sector.

The largest consumer of energy in the industry sector are the food, beverage and tobacco sectors (18.76%), and biomass does not feature as a fuel in these industries. Over the past 10 years the lack of innovation in these industries has hampered their development. The cost and availability of energy is an increasing concern for industry due to rising costs of fossil fuels.

Although relevant bio-energy conversion technologies are known and available worldwide and in neighboring countries, their reach has so far not penetrated Albanian SME sectors.

The economic potential of biomass is estimated to be able to satisfy about 60% of Albania's energy demand with the current level of overall primary energy resources consumption in Albania. Realization of this potential would lead to a replacement of approximately 0.2 million tons of fuel equivalent (counting a penetration rate at 2020 of about 16-20% of total potential) per year of fossil fuel and decrease greenhouse gas (GHG) emissions by 0.3 million tCO_{2eq} per year.

The olive and olive oil sector are important sectors of Albanian primary production and agroindustry. Primary production of olives accounts for approximately 16% of total fruit output in value, including grapes. The number of planted trees exceeds 11 million and is rapidly increasing, as a response to sustained demand, good prices and government subsidies for expanding the production base. Official data on olive oil production show an output ranging between 6,4 Mt in bad harvest years to 15 Mt in good harvest years. There is a structural production deficit of approximately 1,000 Mt per year, mostly covered by imports of bottled olive oil from Italy and other EU countries.

Main production areas of olives for olive oil are Vlora, Lezhë, Krujë, Durrës, Elbasan, Kavajë, Fier, Mallakastër, Berat, Skrapar, Lushnjë. In these areas, 90% to 95% of cultivars are for olive oil production. Demand of table olives is also growing. Considering also olives from olive oil cultivars processed as table olives, about 15% to 20% of total production of olives is processed/used as table olives. There is also a structural deficit of table olives, mainly covered by imports from Greece. Production of table olives is concentrated in Berat, where it is estimated that more than 90% of olive trees belong to the table olive variety Kokerrmadh. Processing industry is specialized: with the exception of a medium-sized producer in Berat, all the other industries are producing either table olives or olive oil. Official data for 2009 show 108 enterprises processing all edible oils, including olive oil, number that in 2017 increased to 280 olive mills, some oil mills are not registered yet. The estimate number of working oil mills score about 450 units and about 16 enterprises are processing table olives.

The olive tree begins to produce olives between the ages of 5 to 10 years, reaching maturity at about 20 years. After 100 to 150 years, its production begins to decline. The age of the tree influences only the quantity produced, not the quality. Olive harvesting is variable and varies from 8.6 kg/roots to 25.9 kg/roots depending on soil and climatic conditions. Progressive increase in productivity in recent years is the result of better technologies and

added maintenance services such as irrigation and fertilization. Also the introduction of new olive varieties with high yield has improved the variance structure and has reduced the phenomenon of periodicity.

Olive mill waste is an old standing environmental problem because it is responsible for acute pollution of a large number and variety of aquatic and terrestrial ecosystems, directly affecting the scarce water resources and soils of the Mediterranean region and the marine environment. The produced wastewater is mainly characterized by a high degree of organic pollutants, polyphenols and aromatics, forming inhibitor or toxic substances, which constitute a serious environmental problem for soil, rivers, and groundwater. Because of the great variety of components found in the liquid and solid waste of oil mills many different appropriate technologies are required in order to eliminate those that have harmful effects on the environment. From an economic perspective, it is important to develop profitable uses for the final waste product, such as organic fertilizer, soil conditioner, and livestock feed or more advanced bio-chemicals and bio-energy.

Key social considerations related to modern biofuels industry include: Job creation; ownership; access to food; land and water; labour conditions; and rural development generally. Bioenergy is possibly the most labour intensive energy source. There is little doubt that bioenergy development will bring about significant job creation where opportunities will exist in feedstock production, handling and processing; distribution and marketing. New positions would include high-skill science, engineering and business related employment, medium-level technical jobs and – depending on the scale of production (large scale plantations, or medium and small scale operations) and on the degree of mechanization – new employment opportunities arise for unskilled workers. Development of bioenergy will have a much more dramatic impact on rural livelihoods when the production involves the participation and ownership of plants by small-scale farmers, their proximity to conversion facilities that are suitable to rural settings and a fair share of the accrued revenue.

For doing so, the project has been based on the approach to engage the private sector, facilitating sustainable industrial development and strengthening the policy framework to enable an anchorage in national institutions and hence to foster economic growth. By working closely with SMEs, national ministries, partner agencies, academia, industrial associations, financial institutions, potential investors and autonomous research centers in the country and abroad, the project was supposed to establish an effective awareness campaign and platform to mobilize interest among targeted beneficiaries and ensure an increased use of biomass energy in industrial sectors.

2.2 Project summary

Project objectives and structure:

The main objective of the GEF project is to demonstrate the energy generation from olive residues through modern RE technologies and trigger a transformational effect throughout the olive oil and other sectors. Based on the experience gained through the demonstration projects, and supported by tailored capacity building in the target sectors, involvement of the financial sector and a detailed understanding of the economic potential of the sub-industrial sectors, the project contributes to the creation of a business environment enabling private sector investment. The project involved the key public and private players, and was supposed to disseminate the results towards a larger audience in relevant industrial sectors (e.g. wood processing, wine production, jam-fruit production and other industries which have already presented their interest by signing letter of intent).

The selected project strategy built on two favourable factors namely the high commitment by the government to the development of modern biomass energy, and significant interest by the private sector to invest in more efficient technologies.

The project was designed to contribute to the GEF Climate Change Strategic Objective 3: Promote investment in renewable energy technologies. The project aimed to transform the market for using organic waste from the olive oil and other industries for energy production. It aimed to achieve this through triggering investment in organic olive and other industry waste-to energy projects, through market demonstration, development of appropriate financial instruments, capacity building and by strengthening the policy and regulatory environment. Setting up the market environment that allows and promotes the use and replication of such technologies was supposed to lead to significant GHG emission reductions and help Albania in its transformation towards low carbon development.

At the end of the project implementation there are several impacts expected:

- investments are increased due to the improved conditions on the market and the perspectives that are opening up for agri-businesses and local producers leading to an increased demand for olive oil production and corresponding utilisation of olive oil production residues;
- the policy and institutional framework enhance the penetration and scaling-up of the use of olive oil and other processed products;
- awareness raising and capacity building activities contribute to significant indirect reduction of CO_2 emissions.

The Project was implemented in three components that were expected to generate outcomes that, when achieved, will realize the Project Objective. Moreover, the Project was expected to deliver certain outputs that would help to achieve the desired outcomes. The outcomes are enumerated below:

- **Outcome 1**: Increased utilisation of industrial biomass waste for energy purposes through technological innovation to trigger transformation of the olive oil industry;
- **Outcome 2**: Strengthened capacities on the application of modern biomass technologies for key actors in the policy and industrial sectors in the olive oil and other sectors with high replication potential;
- **Outcome 3**: Detailed assessment of the biomass potential for industrial uses and the way forward for replication developed;
- **Outcome 4**: Pipeline of project for replication developed and supportive regulatory environment created.

Before the project started for the poorest people the opportunity to overcome the development divide strongly depended on the possibility to access energy to transform their products and develop the local economy. In this context, renewable energies, in particular through distributed generation, represent an opportunity for local populations to cover their energy requirements, create employment and generate income without destroying the environment.

The implementation of Project actually commenced in June 2016 and terminated in June 2021, including several extensions (refer to section 2.2.1 for further details).

Project timing and duration:

	Scheduled	Actual
Implementation Start Date:	October 2014	June 2016
Implementation End Date:	October 2017	June 2021
Project Duration	36 Months	60 Months

Project cost and co-financing:

GEF Grant	**US$ 927,000**
Co-financing (in cash and in kind):	
UNIDO	US$ 100,000 (Grant US$ 50,000 and in-kind US$ 50,000)
MoTE	US$ 180,000 (Grant US$ 80,000 and in-kind US$ 100,000)
MoIE	US$ 1,180,000 (Grant US$ 590,000 and in-kind US$ 590,000)
Private sector (target enterprises)	US$ 1,370,000 (cash)
Local financial institutions	US$ 1,799,000 (loans)
	US$ 4,629,000
Grand Total:	**US$ 5,556,000**

UNIDO, Ministry of Tourism and Environment (MoTE), Ministry of Infrastructure and Energy (MoIE), private enterprises (investors) and local financial institutions provided their respective co-financing contributions in the form of cash, grants, loans, and in-kind support.

2.2.1 Project start and duration

The project was initially submitted as a medium-size proposal for GEF approval in July 2014. The final approval for a GEF grant of USD 927,000 was received in August 2014. The project was launched in October 2014 with a project duration of 3 years, with the initially planned termination date of October 2017 extended several times until December 2019, then revised to December 2020, and due to the COVID-19 pandemic in 2020 the actual implementation end date was set for June 2021.

A detailed explanation of project implementation delays is provided in section 3.2.2.

2.2.2 Main stakeholders

The main project stakeholders include:

Ministry of Tourism and Environment: MoTE is responsible for the implementation of the state policy in the field of environment protection. MoTE also executes state control concerning environmental protection, rational use of natural resources, ecological safety, as well as state supervision of nuclear and radioactive activities. MoTE will also issue permits to those organisations manufacturing pellets or briquettes.

Ministry of Infrastructure and Energy: MoIE is in charge of developing and implementing state policy on RES in general and biomass usage in particular. MoIE will be on steering committee and will be actively involved in drafting and approving secondary new legislation as needed to promote the energy biomass (as waste from different industries: focus in olive oil industries, wood processing, wine production, jam-fruit production) technologies programme

Ministry of Agriculture and Rural Development: as applicable, for exploring the possibility for utility driven delivery and financing mechanisms as a part of a broader strategy for the whole chain of olive sector.

National Agency for Natural Resources of Albania: NANR is the agency responsible for all natural resources, including renewable energy, and will act as the focal agency for technical and energy policy related activities. NANR is also expected to provide co-funding requirements, initiate policy action and facilitate the process of bringing other stakeholders on board.

NGOs – Involved with regard to awareness raising and training and to the technical and environmental indicators for biomass usage. In particular the industrial associations which could benefit from modern biomass used for energy purposes. This includes the Albanian Association of Olive Oil Producers, Albanian Association of Food Producers, Albanian Wine Producers Association, and Albanian Agribusiness Associations, who will be responsible for raising awareness amongst their respective members. The AAOOP has been actively involved during the project design.

Target enterprises: During the PPG Phase, 15 energy audits were conducted in olive oil units across Albania. Based on the field visits data and the results from the energy audits, 15 prefeasibility reports were prepared. Industry owners are an integral part of the project as the key beneficiaries and have already formally expressed their wish to cooperate in this area. In addition to hosting demonstration projects and scale-up projects they will be involved in stakeholder consultation, in training and awareness activities.

Banking sector: Domestic banking community developed and introduced attractive financing products for energy industrial-biomass technologies purchase. In particular Credins Bank, Procredit Bank Albania, Intesa Sanpaolo Bank and BKT have expressed their interest to enter this sector. As part of the project these banks received trainings and a guidebook to help assess biomass technology projects.

Academia: Curricula development in the Albanian universities and information exchange with academic staff and students on renewable energy.

UNIDO: as the GEF Implementing Agency holds the responsibility for the implementation of the project, the delivery of the planned outputs and the achievement of the expected outcomes. UNIDO is responsible for monitoring of the project, and reporting on the project performance to the GEF.

3 Project Assessment

3.1 Project Design

The Biomass Project was designed to promote market-based mechanisms to create demand for efficient technologies using fuel wood and support from the government in the form of incentives and policy measures. Thus, the objective of the project was to reduce the pressure on local forest due to inefficient consumption of fuel-wood, reduce the rate of deforestation and improve the air indoor air quality and an overall reduction in the GHG emissions through a wide spread use of use biomass energy technologies should be met.

The project was developed at a stage where there were a number of on-going and planned initiatives in Albania which supported either renewable energy or the agriculture sector. However, there were no initiatives that were targeted specifically at the use of organic biomass waste for energy in the SMEs agro-processing sector. The UNIDO-GEF project therefore aimed to build upon these on-going initiatives to address this gap.

Based on the barriers identified and through its specific approach, the ***project design*** sought to enhance the impact leading to the reduction of GHG emissions from the further investment in biomass-to-energy technologies due to its policy, technical and capacity building activities that were designed to address the current barriers to investment. These were likely not only in the olive oil industry but also in other industries, resulting in direct and indirect GHG emissions reductions.

The project's focus on introduction of improved biomass energy technologies (BET) and dissemination/capacity-building measures was rationalized by a number of factors, including: (i) energy supply situation and dependence on fuel wood in rural areas, in spite of impressive electricity supply from renewable in Albania already; (ii) growth in the energy demand and biomass supply potential; (iii) growth of the agricultural industry including olive oil production, fruits, vineyards and other potential sources of biomass fuels; and (Iv) reduced wastage of biomass residue in agro-industries, from alternate BET which convert the residue into fuel or for use in space heating or other alternatives than fuel wood.

The **project results framework** is included in Table 4. The project design was developed in 2013-2014 and from the beginning has foreseen 2 components, which respond to the general barriers that the project was trying to overcome. Altogether, the project planning logframe has established overall 42 indicators to track and report progress under the two components, which seems too high. While it is positive that there is a rationale to the indicators provided in the logframe towards the achievement of an outcome, the number of indicators is excessive with most outputs burdened with more than one indicator. Moreover, there are few indicators that are used several times and mixed up between objective, output and outcome indicators (e.g. investment mobilised, GHG emission reductions, number of pilot project facilitated) which is considered redundant.

Otherwise, the Project is adequately designed for the following reasons:

The project is appropriately designed on its objective, its activity components and relating intended outcomes, to ensure the coverage of main aspects required to achieve the overall development objective in the allotted time frame. However, it has some shortfalls on the project results framework, since the number of indicators is very high (42 in total) for a medium-sized project of initially foreseen 3-years implementation period, and end-of-project targets are not always consistently described or designed SMART.

The project design imbibes a suitable balance in the respective weightages assigned to the two project components targeted to address the prevailing constraints affecting the biomass to energy and agro-industry requirements as well as the clean energy potentials in that sector amidst the climate change concerns.

The project implementation is providing technical assistance to projects by having technical advisors on board to bridge any initial gaps in technical capacity required for the system integration aspects associated with the financing demand and economic performance of a growing industry.

Project design is rated Satisfactory.

Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
	S				

3.2 Implementation Performance

3.2.1 Relevance and Ownership

Relevance

The overall **relevance** of the Project has to be considered in respect to its overall aim to mitigate GHG emissions from deploying biomass technologies within the olive oil production industry and thus sustain the Government's priorities to promote sustainable development as set out in the National Energy Strategy.

Further aspects that substantiate the relevance of the action are summarised below.

1. The UNIDO-GEF Project is in line with national priorities.

The project reflects the Government of Albania's (GoA) priorities to promote sustainable development and, as a member of the European Energy Community, its commitment to apply European legislation on renewable energy (RE), which sets specific targets for the share of RE in final energy consumption.

A number of the legal framework, policies, programs, strategies and action plans related to energy production from biomass and industrial waste management are meanwhile in place in Albania. Furthermore, in accordance with EU legislation and the Energy Community Treaty, the Government of Albania and the Energy Regulatory Authority (ERE) have already adopted a number of secondary and regulatory acts. However, there are many amendments that have to be integrated in the reviewed documents to ensure a sustainable expansion of bio-energy use and sustainable waste management, especially on support and promotion of the heating using biomass with high efficiency for local heating systems, which is still underdeveloped and in the initial step.

The project is also consistent with the First, Second and Third National Communications of Albania to United Nations Framework convention on Climate Change (UNFCCC) prepared with the support of GEF/UNDP with its focus on promotion of RES and EE to implement GHG mitigation scenario. According to the mitigation scenarios it requests to set targets for the share of energy from renewable sources by 2020 in the following sectors: heating and cooling, electricity and transport.

The targets suggest that modern biomass (including industrial biomasses from the olive oil industry) will contribute about 35-40% of the targets related to heating whilst biofuel will provide up to 10% of total fuel consumption in the transport sector in order to reach the targets in transport. The project, with its focus on an increased use of olive oil and other industrial organic waste streams is clearly in line with these Government objectives.

2. The Project is to mitigate/remove associated barriers and create sustainable market conditions for energy from biomass in Albania.

Despite the significant potential for modern biomass applications in the agro-industry, the technology is not yet widely adopted in Albania. The technology involves high costs when compared to other conventional sources and requires technical and financial support to make it profitable for heat/cooling generation.

The steps to achieve a critical market size include (a) increased awareness about biomass applications, acceptance of its use and well-designed technical integration into production processes, (b) increased number of participants entering the market with a larger share of private investment, (c) agro-industry and farmers beginning to invest heavily into market development and R&D initiatives, (d) increased production of olive-oil and heightened levels of marketing driving down costs of procurement and installation for biomass technologies.

The Project provided from the beginning a strong case for political and institutional support to kick-start the market until a critical market size is reached. However, a wide range of associated barriers are to be overcome to achieve market growth:

- Awareness and capacity barriers
- Financial barriers
- Technical barriers
- Policy and regulation barriers
- Market development barriers

The innovativeness of the Project lies in the development of national capacities at key governmental institutions, and creating an enabling environment for a national market in biomass waste-to-energy use.

The project seeks to address many of these existing barriers to the wide scale adoption of biomass technologies in the agro-industry in Albania through an integrated approach that combines interventions aimed at improving the enabling market for investment in biomass technologies (capacity building, development of guidelines and best practice, and conducive regulations) in addition to pilot projects aimed at demonstrating technical feasibility and commercial viability. It is envisaged that these interventions, seen together, will catalyse greater investments for biomass-to-energy in Albania. The sustainability strategy of the project is embedded in the technology demonstration for use of modern biomass technologies in industrial applications, their scale-up and capacity building (component 1), and in the creation of an enabling market and regulatory/policy framework for biomass technology in industry (component 2), which have the ultimate aim for sustainable replication and reach its full potential in the long-term.

3. The Project contributes to the GEF portfolio and UNIDO's thematic priorities

UNIDO is one of the Global Environment Facility (GEF) implementing agencies having comparative advantage in the development and implementation of renewable energy projects, and in particular for productive activities. The project fits squarely into the GEF Focal Area Objective 3: Promoting Market approaches for Renewable Energy. UNIDO has over the years successfully designed and implemented similar projects, both with and without GEF funding. UNIDO is implementing GEF projects in SE Europe that have been highly successful. In particular, the project's focus on renewable energy for productive uses is in line with UNIDO's mandate and area of comparative advantage in line with the GEF Council document GEF/C.31/rev.1. Energy and climate change is one of UNIDO's key areas of focus. UNIDO's energy-related activities include the promotion of clean and sustainable sources of energy and the enhancement of renewable energy in industrial processes.

Within this project, UNIDO supported the drafting of a policy and regulatory financial support schemes and measures for establishing an enabling environment for a rapid uptake of bio-energy technologies production. Support included the preparation of guidelines for policymakers and guidance on how to develop quality infrastructure in support of national renewable energy technology markets and consultations with major stakeholders (policymakers, agro-processing lines in the olive-oil sector, and relevant agro-industrial associations). As a result of technical assistance provided to 40 enterprises to prepare feasibility studies and business plans, and to complete a grant application procedure, nine pilot enterprises received grant support and have installed in total 14 pieces of bio-energy equipment, helping reduce the national GHG emissions by replacing fossil fuel and supporting the development of biomass energy and the biofuel sector. Enterprises will be less dependent upon fluctuating energy costs and will manage their waste in a sustainable manner. UNIDO's efforts in Albania have contributed to enhanced stakeholder cooperation and investments in clean energy technology, increased share of renewable energy and access to affordable, reliable and modern energy services, set up the market environment that allows and promotes the use and replication of bio-energy technologies, leading to significant greenhouse gas emission reductions and help Albania in its transformation towards low carbon development – contribution to SDGs 7, 9, 13.

Country ownership

As mentioned above, the project design is consistent with the national priorities and policy framework of the Government of Albania. The importance and benefits of the project and increased focus on demonstrating technical and financial viability of biomass projects and enhancing awareness and strengthening capacities for key actors in the policy and industrial sector (in the olive oil and other sectors with high replication potential such as wood processing, wine production, jam-fruit production), were also unanimously emphasized in all stakeholder interviews conducted during the evaluation mission.

As evidenced by the annual Project Implementation Reviews as well as by the minutes of the Project Steering Committee (PSC) meetings, the country representatives both at the governmental level as well as national institutions, associations and private sector entities have actively participated in the project implementation and decision making. The PSC has been consulted on all important decisions and approval sought before the final decision. The composition of the PSC can be considered as adequate by taking into account the scope of the project.

Overall, the main governmental stakeholders (most of them involved in the PSC anyway) have expressed during individual meetings their full satisfaction and positive experiences made under the umbrella of the biomass project, and concluded during the TE online interviews that a continuation of national activities to promote the further distribution of biomass technologies and support mechanisms for engaging private sector in replication activities on the Albanian market shall be sought.

Partnerships that were established and strengthened during the project implementation included:

Private sector and industry associations:

Olive oil farmers and producers, operators of greenhouses and other agricultural industries have benefited from the project. GEF and UNIDO’s support increased the economic competitiveness of several enterprises since they were provided with new technology applications and at the same reducing operational expenses for heating and their environmental impact. Also, smell and emission problems in proximity to neighbours could be reduced.

On behalf of the Albanian Olive Oil Association the continuous support to the members of the association changed the view on using resources efficiently; due to the awareness and capacity-building activities olive pomace generated in the factories is not seen any more simply as a waste, but as a valuable by-product and resource. The enterprises are now practicing to use the residues for energy production, reducing the production costs and saving on energy bills. The members of the Association of Olive Oil Producers were content about UNIDO’s open and transparent consultations and procedures applied during the project activities on several occasions.

Academia and the University of Agriculture in Albania:

In Albania the education system on renewable energy comprises the secondary and high schools and universities. More detailed programs on renewable energy are in universities. Renewable energy as a concept, module, lectures or part of lecturers are included in several study programs and universities.

The main universities that offer modules and study programs on renewable energy are Agricultural University of Tirana (AUT), Polytechnic University of Tirana (PUT) and University of Tirana (UT).

Meanwhile, the Faculty of Agriculture and Environment at the Agricultural University of Tirana (AUT) and the Faculty of Mechanical Engineering at the Polytechnic University of Tirana (PUT) offer a Master program in "Renewable Energies". This master intends to create a professional figure that has in-depth knowledge in the field of renewable energies such as solar, wind, biomass, geothermal, water, etc. the main teaching modules related to renewable energy are: Renewable energy systems, Waste energy treatment and Bio-Energy. Several master thesis related to renewable energy were submitted from the students of these programs. The project created links with these universities, a platform for knowledge sharing related to renewable energy and bio-energy production.

Government of Albania:

The GoA has been the main partner of the project and as such been involved in all relevant political and policy-related developments. Albania’s National Renewable Energy Action Plan 2015-2020[5] outlines the country’s target of increasing the final energy consumption by 38% with renewable energy sources by 2020. Meanwhile, the National Energy Strategy 2018-2030 highlights that Albania has substantial biomass potential from agricultural residues, estimated at 2,300 GWh per year. Based on the national goals to increase energy from biomass, UNIDO in cooperation with GEF and the Albanian Government developed this project and the GoA meanwhile puts a higher priority to biomass sources to promote the use of different agro-industrial residues within its energy strategy. Built on the knowledge gained from the project, the Government also plans to co-finance and install biomass boilers in kindergartens and schools in Albania.

In addition, members of the PSC were drawn from MoTE, MoIE, MoARD (Ministry of Agriculture and Rural Development), MoFE (Ministry of Finance and Economy), as well as NANR (National Agency of National Resources), NEA (National Environment Agency), NCETSD (National Center for Environment, Tourism and Sustainable Development) and AAOOP (Albanian Association of Olive Oil Producers) to provide wide but important perspectives in the decision making process to support the project. In principle all relevant institutions in the field of olive oil production, regulation, policy-making and promotion have been represented in the PSC

International and local consultants were involved in the baseline and technology assessments.

UN in Albania and other international organizations:

Albania is one of eight countries in the world selected in January 2007 to pilot UN's 'Delivering as One' approach. Under its spirit, the United Nations' Programme of Cooperation for Sustainable Development (PoCSD), covering the period 2017-2021, assists Albania to achieve its SDG targets by supporting the pursuit of full European integration, as expressed in the National Strategy for Development and Integration. In contrast to the previous programme cycles, the PoCSD 2017-2021 emphasizes the shift from "Development Assistance" to "Partnership for Sustainable Development". On this matter, several joint meetings are organized with other UN agencies in Albania and UNIDO's partnership and support to the olive oil sector is acknowledged. Moreover, the new Sustainable Development Cooperation Framework (2022-2026) between the GoA and the UN highlights that there is great potential for wind, solar, and biomass power generation, greatly increasing the country's resilience to climate change and contributing to SDG 13 Climate Action.

The Project is highly relevant for the following reasons:

In line with Global as well as National priority towards acquiring a greater and relatively significant share of renewable energy dependent growth and competitiveness of the agricultural industry.

Supportive and focussed to accelerate adoption of biomass technologies in targeted industrial sectors with reasonable potential and scalable future replication across the whole country.

In accordance with the multi-pronged national strategy that is already in place to promote renewable energy and especially biomass for energy use through regulatory and institutional support measures.

Various representatives from government, manufacturers/suppliers, banking/financing and technical institutions, industry associations affirmed high relevance of the project to the evaluation team.

Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
HS					

3.2.2 Adaptive management

The Project experienced significant delays in its initiation phase from October 2014, with effective implementation only started in September 2016.

A summary of the experienced delays is given below:

- Initial delays were caused due to the formal approval of the project document by the Council of Ministers of Albania. In order to start with the project implementation, UNIDO in close consultations with the MoTE and MoIE prepared the Project Coordination Agreement and submitted to the Government of Albania for approval by the Council of Ministers in February 2015. Due to administrative processes the time scale of the approval procedures from the competent authorities in the country took longer than expected. The Council of Ministers approved the project in June 2016.
- Following the approval, UNIDO started the implementation of the project activities including the operationalization of the cooperation agreement with the Agriculture and Rural Development Agency (ARDA). However, the cooperation with ARDA did not go on as it was planned, and several delays were experienced.

Several steps and procedures were taken by UNIDO and key partners in order to speed up the implementation process and providing clarification at the national level. The following actions were taken:

1. In a letter addressed to the Ministry of Environment in November 2015, UNIDO requested the authorization to start the implementation of a number of project activities since it remained unclear the time scale of the administrative process of the approval of the Project Coordination Agreement.

2. In another letter addressed to the Ministry of Agriculture, Rural Development and Water Administration in February 2016, UNIDO formally informed the ministry of the plan to enter into a contractual agreement with the Agriculture and Rural Development Agency, given its specifically relevant mandate and expertise. However, UNIDO was informed that the cooperation with ARDA could not be established without the formal approval of the project by the Council of Ministers.
3. In anticipation of the project approval by the Council of Ministers, the 1st Project Steering Committee Meeting (PSC) meeting was organized in March 2016 to get an update on the implementation of the project and also to seek policy and strategic direction.
4. Following the approval of the project, the Minister of Environment through a letter dated in September 2016 addressed to the Minister of Agriculture, Rural Development and Water Administration, requested the Ministry to follow up with ARDA to submit a proposal and to finalize the agreement with UNIDO.
5. UNIDO invited ARDA to submit the proposal through UNIDO's procurement portal and to confirm the scope of the activities to be undertaken. This was done as per UNIDO's rules and regulations.
6. In addition, UNIDO launched an open tender for companies to provide technical expertise in support of ARDA (such as detailed technology packages, preparation of guidelines for applicants and operational manual). However, the contract for the technical expertise was not awarded because the cooperation with ARDA was not established.
7. The 2nd PSC was organized in November 2016 in order to seek policy and strategic directions and to recommend alternative project strategies since it remained unclear how long the administrative process of ARDA could take.
8. As it was agreed during the PSC meeting, UNIDO launched calls for applications for experts to assess the bio-energy potential, to strengthen the national capacities and to provide services for the preparation of guidelines, business plans and feasibility studies for bio-energy technology applications. The contracts for the experts are awarded and the groundwork has started.
9. In a letter from March 2017, the General Director of Environment and Chair of the PSC for the project in Albania, requested UNIDO to extend the project period up to September 2018 in order to achieve the outcomes and outputs as outlined in the project document.
10. Furthermore, during the 3rd PSC meeting organized in Tirana in January 2018, the PSC members recommended to extend the project interval by 1 more year (due to all the aforementioned delays and in order to complete all the activities, such as giving some time to the enterprises to form associations by creating consortiums and grouping several enterprises in the same geographical area). It was also agreed to lunch the activities on the policy component for undertaking in-depth targeted policy and regulatory initiatives to ensure a sustainable expansion of bio-energy use across industrial sectors in Albania.
11. In a letter from May 2019, the General Director of Environment and Chair of the PSC for the project in Albania, requested UNIDO to extend the project period for one more year in order to achieve the outcomes and outputs as outlined in the project document for the following reasons:
    - The Ministry of Tourism and Environment has previously committed to co-finance the project in the amounts 80,000 USD (as cash) and 100,000 USD (in-kind) in order to take forward the use and promotion of biomass energy-based heating applications in industry. However, the amount was not allocated in time to the project due to budget limitations. The ministry planned to co-finance and install some biomass boilers in some schools/kindergartens around Albania. For that more time was needed to identify pilot schools in different municipalities of Albania, select few of them in order to allocate the budget to the project.
    - Regarding the technology demonstration in agro-industry only 10 enterprises have completed the application process for UNIDO support. The project targeted to reach at least 15 pilot projects. The Albanian Association of Olive Oil Producers and the PSC members were requested to invite more enterprises to participate in the project. More expressions of interest and applications were demanded (and actually received) in order to reach the expected number of pilot projects and therefore more time was needed for the enterprises which were in the process of purchasing, installing the equipment and for other enterprises to come forward.

12. Implications of the COVID-19 pandemic on the project implementation: The outbreak of the virus in Albania and the restrictive measures to contain it, like in most countries world-wide, had an impact on the progress of the project. The result was a project extension by another 6 months (from December 2020 to June 2021) The restrictive measures put in place, although necessary for containing the virus and saving lives, have resulted in heavy toll on the SMEs, with direct consequences felt by those working informally, and the self-employed in the agriculture sector and in the olive oil industry. Major direct impacts associated with the project implementation:
    - Impact on Agriculture: Most farms in Albania are family-owned and operated, meaning that agricultural production is mainly for self-consumption and have limited surpluses available for the market. In the early days of the restrictive measures, there were significant uncertainties. As a result, low levels of collection/harvesting of produce especially in greenhouses has been reported.
    - Impact on employment, loss of income and heightened uncertainty, reduction of spending and consumption, lower investments in bio-energy technologies: on the supply side, companies have experienced a reduction in the supply of labour, as workers become sick or need to look after children or other dependents while schools are closed, and movements of people are restricted. Measures to contain the disease with lockdowns and quarantines have led to further and more severe drops in capacity utilization.
    - On the demand side, a dramatic and sudden loss of demand and revenue for SMEs has severely affected their ability to function, and/or caused severe liquid assets shortages. Furthermore, consumers have experienced loss of income, fear of contagion and heightened uncertainty, which in turn reduces the spending and investments including in bio-energy technologies
    - Impact on financial markets, reduced confidence and reduction of credit for SMEs: various impacts have limited SMEs in accessing the credit opportunities and investing in bio-energy technologies
    - Impacts on imports of equipment, and difficulties reaching export markets: There were reported difficulties in procuring and importing some technologies from Italy, one the most affected countries in Europe. Moreover, Italy is one of the largest trade partners of Albania being the destination for half of the national export products. Due to the COVID-19 measures, temporary difficulties have been reported in accessing export markets for agriculture products at the beginning of the implementation of restrictive measures. The same problem was observed by one of the beneficiary enterprise for procuring a pellet production machine from China.

The aforementioned circumstances have significantly influenced the achievements of the project objectives and outputs within the timeframe as outlined in the project document. In view of all the above factors, the requested extensions were required to achieve all the outcomes and outputs as outlined in the work plan.

3.2.3 Effectiveness

Effectiveness of the project is primarily assessed by the achievements, both qualitatively and quantitatively, of the (expected) outcomes and related outputs, based on the information on the indicators for these.

3.2.3.1 Project Description and Strategy

The project sought to address most of the existing barriers to a wide scale adoption of industrial biomass waste-to-energy in Albania through an integrated and catalytic approach that combined interventions aimed at creating a market environment conducive to investment and demonstration projects. The main objective of the GEF project was therefore to demonstrate the energy generation from olive residues through modern RE technologies and trigger a transformational effect throughout the olive oil and other sectors.

The project was made up of two technical components, as below, plus monitoring and evaluation and project management:

- **Project Component 1:** demonstrate the technical feasibility and commercial viability of modern biomass technologies in the olive production sector in Albania; create best practice examples for the country for further dissemination and to help raise awareness.

- **Project component 2:** develop the market environment for biomass technology in industry in Albania through: enhancing awareness and strengthening capacities for key actors in the policy and industrial sectors (in the olive oil and other sectors with high replication potential such as wood processing, wine production, jam-fruit production), as well as supporting tailored policy actions and scale-up activities including the preparation of a detailed assessment of the biomass potential for industrial uses and the development of a pipeline of projects for replication.
- **Project Component 3:** monitoring and evaluation of the project progress

The global environmental benefits targeted at the end of the project lifetime were defined as follows:

- Direct emission reductions within this project should result from the investment in a minimum of 15 demonstration projects and in direct assistance in a further 30 replication or scale-up projects. These projects would be installed and commissioned during the project's 3-year implementation phase resulting in direct GHG emission reductions. For each of these projects an economic lifetime of 20 years was assumed.
- Direct emission reductions: for the 15 demonstration projects aimed at 53,000 tonnes of CO_2 equivalent (tCO_{2eq}) over the lifetime of the investments, and for the 30 replication projects this results in double this figure with a further 106,000 tCO2eq.

The Project Proposal (CEO Endorsement Request) specified expected project results – project outcomes and outputs for each project component that relate to the immediate objectives.

- **Component 1: Technology demonstrated for use of modern biomass technologies in industrial processes in Albania.**

  This component will stimulate technology and process innovation through demonstration projects in the olive production sector. Indicatively 10% of the enterprises will be targeted, i.e. a minimum of 15 out of the approximately 178 enterprises member of Olive Oil Production Associations currently active in the olive oil industry. The representative enterprises will be supported to prepare feasibility studies and related bankable business plans, provided with a grant and assisted in accessing finance and the technology will be demonstrated at the olive industries.

  - **Outcome 1.1: Increased utilization of industrial biomass waste for energy purposes through technological innovation to trigger transformation of the olive oil industry**
  - ***Output 1.1.1:*** *A minimum of 15 business plans and feasibility studies developed for demonstration plants in SMEs using olive solid residues for the production of energy, including the following activities:*
    - Selection of demonstration enterprises (incl. verified eligibility criteria for their selection)
    - Preparation of guidelines for detailed business plans and feasibility studies
    - Development of min. 15 projects using olive solid residues for energy purposes
  - ***Output 1.1.2****: Financing secured for indicatively a minimum of 15 demonstration plants, including*
    - Development of guidelines for GEF grant allocation
    - Allocation of grant assistance to enterprises
    - Assistance to enterprises in securing finance for their demonstration projects
  - ***Output 1.1.3:*** *Demonstration plants built at a minimum of 15 olive oil industries with an estimated total capacity of at least 1-1.5 MW_{th}, including the following activities:*
    - Installation and commissioning of demonstration projects
    - Performance monitoring and analysis of installed projects, incl. documentation of results and preparation of case studies

- **Component 2: Development of the enabling market and regulatory environment for biomass technology in industry in Albania.**

  This component's activities are split into three key areas all of which will ensure that a long-term market for biomass technologies is developed in Albania. The training will include train-the-trainers sessions ensuring that staff in the key sector associations, governmental entities and the ministries are in a position to pass on their knowledge beyond the end of the project. In particular, the associations will help ensure replication through their members and can play a role in identifying possible clusters of factories that could work together. This will include work in helping with the market surveys and in encouraging factory owners to

become replication projects through the demonstration of the benefits. NANR will have clear ownership of the policy initiatives in developing the secondary legislation needed to support the market.

- **Outcome 2.1: Strengthened capacities on the application of modern biomass technologies for key actors in the policy and industrial sectors in the olive oil and other sectors with high replication potential**
- ***Output 2.1.1:*** *200 policy-makers, industry representatives and investors made aware and trained to understand the benefits of modern biomass and new technologies, through 5 training workshops, dissemination of best practices and guidebooks for policy makers, project developers and investors on the procedures and development process of an industrial biomass project, including the following activities:*
  - Development of national capacity in agencies and associations
  - Development of best practice reports and project flyers on demonstration projects
  - Development of guidebook for policy makers, project owners and investors
  - Five training workshops
  - Awareness raising, marketing campaign and development of technology website

- **Outcome 2.2: Detailed assessment of the biomass potential for industrial uses and the way forward for replication developed**
- ***Output 2.2.1:*** *Short- and medium-term potential for modern biomass applications for industrial uses assessed, and the way forward for replication across sectors developed, including:*
  - Detailed market survey and assessment of the short- and medium-term potential
  - Strategy for replication and scale-up

- **Outcome 2.3: Pipeline of projects for replication developed and supportive regulatory environment created**
- ***Output 2.3.1:*** *Approximately 30 projects prepared for replication in facilities using modern biomass technologies, with the following key activities:*
  - Development of standard questionnaire
  - Selection of most promising 30 enterprises for olive and other fruit processing industries for utilisation of industrial biomasses/wastes for energy purposes
  - Energy audits and feasibility studies prepared for bankable projects
  - Preparing the feasibility study, business plan and presenting them together with the investor to the bank for financing.
- ***Output 2.3.2:*** *Tailored regulatory initiatives taken to ensure a sustainable expansion of biomass energy use across industrial sectors*
  - Provide policy advice and support on different topics, including targets for heat to be produced by industrial biomass technologies until 2020, propose amendments to the building code to encourage biomass energy technologies use, expand tax exemptions on imported biomass energy technologies, setup an biomass energy technologies quality control system corresponding to EU regulations, and design a Guarantee of Origin scheme focusing on RE heat.

In a nutshell, the project has achieved almost all of its objectives and has contributed significantly to the development of the biomass energy technology in the agro-industry sector in Albania, with major focus on the use of residues from olive oil production, but also tackling other important agricultural sectors like wine and jam-fruit production.

- More than 40 enterprises were evaluated as pilot projects for technological demonstration. Technical assistance was provided to the enterprises at each stage by UNIDO through international and national experts to prepare the feasibility studies and business plans as well as to assist with the application procedure. The grant support and technical assistance (feasibility study, business plan) was aimed to make biomass energy projects economically feasible for the enterprises which want to invest on eligible technologies.
- The domestic commercial banking sector was involved in the project and introduced attractive financing products for the purchase of industrial biomass energy technologies. In particular Credins Bank, Pro-credit,

Intesa Sanpaolo and BKT have expressed their interest to enter this sector. As part of the project these banks have received training and guidebooks to help assess biomass technology projects.

- The realization of environmentally friendly biomass technologies in the agro-industry was finally contributing to the national GHG emissions reductions by replacing fossil fuel and support the development of biomass energy and bio-fuel sector. The enterprises will in the future depend less on fluctuating energy costs and manage their bio-wastes in a sustainable manner by providing them a productive use (therefore calling biomass not a 'waste' but rather a 'valuable resource'). Below is a list with the completed investments and a link to a video that was produced.

Table 3: List of supported demonstration projects

List of beneficiaries which have installed the technologies and are reimbursed with the grant support of the UNIDO-GEF project							
Beneficiary	**Product Description - Reimbursement of 50% of the equipment purchased under the project**	**Date**	**Capacity installed kW_{th}**	**Energy production kWh/y**	**GHG lifetime ER t CO_{2eq}/yr**	**Net Order Value**	**Equipment installed, grant disbursed**
Ilirjan Subashi	Reimbursement of boiler purchased	2019	110	878 535	7 557	4 155 EUR	YES
Kleant Nezha	Reimbursement of large olive pomace boilers for greenhouses purchased	2019	200	1 677 203	14 428	37 500 EUR	YES
Shkalla SH	Reimbursement of olive pomace/pellet boiler and decanter purchased	2019	150	1 231 280	9 023	56 313 EUR	YES
Romina Deda	Reimbursement of boiler purchased	2020	100	831 946	7 346	4 155 EUR	YES
FA and BI	Reimbursement of pellet production machine purchased	2019	50	410 427	3 531	48 000 EUR	YES
Vladimir Pasmaciu	Reimbursement of olive pit extractor and olive pomace boiler	2019	130	1 095 950	8 454	45 155 EUR	YES
Leonardi Arapi	Reimbursement of olive oil decanter	2020	20	166 389	1 361	42 500 EUR	YES
Gjikondi & Kompani	Reimbursement of biomass boiler and conveyor belt machinery for olives	2021	120	998 335	7 601	8,416 EUR	YES
Total GEF (small units)			***880***	***7 290 065***	***59 300***	***246 194 EUR***	
AFT SHA	Reimbursement of large boiler	2019	1 824	27 425 991	216 504	46 500 USD[3]	YES
	Reimbursement of belt dryer technology	2021				64,807 EUR	YES
Total GEF (small and large units)			***2 704***	***34 716 056***	***275 804***	***311 001 EUR 46 500 USD***	

Long promotional video: https://youtu.be/P_V45L6jWkA

Shorter version: https://youtu.be/0Q8u-VTpNi0

- Moreover, the work was focused on strengthening the national capacities on bio-energy technology applications for key actors in the policy and industrial sectors (in the olive oil and other sectors with high replication potential such as wood processing, wine production, and jam-fruit production).

[3] The large boiler at AFT was the only component charged in US$

- 255 stakeholders have been trained on the benefits of bio-energy technology applications. The financial institutions are involved to assess if and how their existing financing instruments can be accessed for the targeted type of technology investments as part of the business plans and feasibility studies.
- On the policy framework, targeted policy recommendations were developed for supportive instruments and regulatory measures to provide a sustainable and stimulating investment environment for expansion of bio-energy technology applications across industrial sectors in Albania. The policy, regulatory support schemes and quality infrastructure improvements target industrial sectors providing biomass and seek to drive the consumer market (through regulations and incentives) for the demand of biomass as an energy source.
- The project is expected to achieve its major global environmental objectives and yield satisfactory global environmental benefits. Workshops are organized and training modules are delivered to make aware the participants in safeguarding the global environment, contributing to increase investments on bio-energy technologies and stimulating local action.
- UNIDO worked continuously with several government institutions, partner agencies, technical experts, academia, NGOs, industry associations, technology suppliers, financial institutions, olive oil SMEs and other relevant companies, for the promotion of biomass for energy production.

3.2.3.2 Progress Towards Outcomes Analysis

The TE expert team has rated the project’s progress towards its objective and each outcome. The assessment of the results is based on data provided in the PIRs, progress reports and publications, and findings of the interviews with the project stakeholders.

Table 4 below summarizes the final assessment towards the **end-of-project targets** for the project objective and each outcome and output.

Table 4: Progress Towards Results Matrix (Achievement of outcomes against End-of-project Targets)

Project Strategy*	Indicator	EOP Target	EOP Status	Achievement rating	TE Comments
Objective: Increase the use of biomass in industrial energy consumption for productive use through demonstrated use of modern biomass technologies in SMEs in the olive oil industry	Number of new installed state of the art industrial biomass to energy equipment Direct CO_{2eq} emission reductions Indirect CO_{2eq} emission reductions	Minimum of 15 projects 1.2m USD 53,000 tCO_{2eq}	14 installations 4.54 m USD 275,804 tCO_{2eq}	HS	The actual number is 14 new installed technologies/equipment split between 9 beneficiaries. Some of the enterprises/beneficiaries have applied for more than 1 technology in order to complete the processing line. Total sources from private sector 1.37 m USD + 3.17 m USD additional loan financing
Component 1 – Technology demonstrated for use of modern biomass technologies in industrial processes in Albania					
Outcome 1: Increased utilisation of industrial biomass waste for energy proposed through technological innovation to trigger transformation of the olive oil industry	No. of new technologies introduced to olive oil industries (efficient boilers, briquetters, pelletisers, pit extractors, driers). Volume of investment mobilised Tonnes of CO_{2eq} avoided	Minimum of 15 projects 1.2m USD 53,000 tCO_{2eq}	14 installations 3.17 m USD 275,804 tCO_{2eq}	HS	
Output 1.1: A minimum of 15 business plans and feasibility studies developed for demonstration plants in SMEs using olive solid residues for the production of energy.	Guidelines developed for feasibility studies and business plan preparation Number of detailed feasibility studies and business plans Number of demonstration enterprises selected	Set of guidelines developed A minimum of 15 detailed feasibility studies and business plans completed	18 feasibilities and 18 business plans completed		

Project Strategy*	Indicator	EOP Target	EOP Status	Achievement rating	TE Comments
Output 1.2: Financing secured for a minimum of 15 demonstration projects **% women**	Financial closure achieved Amount of mobilized financing (USD)	A minimum of 15 demonstration projects reaching financial closure USD 1.2m mobilized	14 pilot projects USD 1.37m mobilized from private sector		More than 40 enterprises were evaluated from the financial institutions. 4 banks were involved and assisting the enterprises, namely, Credins, Intesa SanPaolo, BKT, ProCredit.
Output 1.3: Demonstration plants built at a minimum of 15 olive oil industries with total capacity of 1 – 1.5 MWth	No. of demonstration plants Installed capacity Annual kWh saved or generated Annual GHG emissions reduced No. of case studies prepared	A minimum of 15 demonstration projects installed and commissioned 1-1.5 MW_{th} installed 53,000 tCO_{2eq} reduced over 20 years[4] 15 case studies	14 pilot projects 2.70 MW_{th} installed 275,804 tCO_{2eq} over 20 years[5] 18 case studies		In total 9 enterprises have installed biomass technologies, for boilers, driers, briquetters/pelletisers, and/or separators. 7 companies installed small capacities between 20-200 kW_{th} (in total 880 kW_{th}), whereas 1 company installed a large boiler and drying unit with 1,824 kW_{th}.
Component 2 - The enabling market and regulatory environment for biomass technology in industry created in Albania					
Outcome 2.1: Strengthened capacities on the application of modern biomass technologies for key actors in the policy and industrial sectors in the olive oil and other sectors with high replication potential	No. of trained personnel No. of training sessions provided No. of future industrial biomass projects identified	200 trained people 5 training workshops 30 projects identified ready for finance	255 stakeholders trained 6 training workshops 40 projects identified ready for finance	HS	Training materials and guidelines have been developed separately for bank and industry.

[4] According to the estimations in the GEF CEO Document: "The investments as part of the technology demonstration (a minimum of 15 olive oil factories will introduce biomass boilers, driers, pelletisers and briquetters based on the needs of each factory) are initially estimated to result in 53,000 tCO2eq emission reduction over a 20 year lifecycle duration of the systems."

[5] For calculations of the CO_2 emission reductions refer to section 3.2.3.3.

Project Strategy*	Indicator	EOP Target	EOP Status	Achievement rating	TE Comments
Output 2.1: 200 policy-makers, industry representatives and investors made aware and trained to understand the benefits of modern biomass and new technologies through 5 training workshops, dissemination of best practices and guidebooks for policy makers, project developers and investors on the procedures and development process of an industrial biomass project	Training materials developed	Training material developed for different target audiences – two vocational training systems related to utilization and installation of industrial-biomass energy technologies, one for financiers and one for industrial end users.	More than 300 copies of training materials and presentations were developed and distributed.		The Project received visibility among dedicated target groups (beneficiaries, FI, academia, govt. entities and agencies, associations), and several capacity building initiatives incl. trainings, guidebook development, best practice reports, public dissemination have been achieved. The reports "Detailed assessment of biomass in Albania" and "Policy and regulatory initiatives to support the sustainable expansion of bio-energy use across industrial sectors in Albania" are available at the shelves of the Ministry of Tourism and Environment and NANR. The Association of Olive Oil Producers is able to provide information on biomass technologies to their members; all the technical reports, assessments, guidelines, are available to their members.
	No. of best practice reports and project flyers developed	6 reports and flyers published (3 of each)	4 best practice reports developed, 4 flyers published		
	No. of guidebooks developed	2 guidebooks developed – one targeted at industrial units and energy users and one at financiers	2 guidebooks developed		
	No. of training workshops delivered	5 workshops	6 workshops organised		
	Total no. of trainees % of women participants at workshops	200 trainees 20% women	255 trainees 30 % women		
	No. of industrial trainees able to make a decision on installing biomass	150	200		
	No. of finance stakeholders trained % of women participants at training workshops	20 40% women	50 40% women		

Project Strategy*	Indicator	EOP Target	EOP Status	Achievement rating	TE Comments
	Awareness raising and marketing Marketing campaign implemented Awareness level of industry associations raised Website established	Public awareness raising, marketing and training material developed and adapted for Albanian conditions and made available in printed and electronic format Availability of marketing material in ARDA and NANR websites and in national press Industrial associations able to provide information on biomass technologies to their members Website established and regularly updated	Marketing materials developed and handed out to trainees AOA producers are made aware and information on bio energy technologies is provided through consultations and workshops Dissemination via UN Albania website		
Outcome 2.2 Detailed assessment of the biomass potential for industrial uses and way forward for replication developed	No. of organisations applying to financing facility for industrial biomass projects	30 projects apply for finance	37 enterprises applied for finance	S	Several enterprises were in talks with the financial institutions in order to receive loans to co-finance the cost of their respective projects, however not all enterprises were able to either secure the necessary funds or got their projects into the implementation stage.
Output 2.2: Short and medium term potential for modern biomass	Sectorial study on short and medium term potential for bio-energy applications	Detailed market survey and assessment of short and medium term potential for	Detailed market survey and an assessment of the		The project replication strategy is available from the "Report on strengthening institutional

Project Strategy*	Indicator	EOP Target	EOP Status	Achievement rating	TE Comments
applications for industrial uses assessed and the way forward for replication across sectors developed	assessed Strategy for the way forward	each of relevant sectors (olive oil industries, wood processing, wine production, jam-fruit production) Strategy for replication developed	current situation in the relevant sectors developed. The findings from the project taken into account for the replication strategy.		capacities", covering policy requirements (e.g. setting national goals for industrial biomass development), elaboration of a Roadmap on Biomass Energy Technologies, introducing policy monitoring and application of risk mitigation measures towards biomass projects. However, the given strategic directions require uptake by the GoA after the EOP.
Outcome 2.3 Pipeline of project for replication developed and supportive regulatory environment created	Extent to which relevant policies and regulations are proposed and adopted	5 specific policies and regulations proposed to government	No. of policies in place to promote biomass to energy in ALB. However, many amendments have to be integrated into the legislation.	S	Recommendations are provided to support the promotion biomass heating uses with high efficiency local heating systems, which is still underdeveloped
Output 2.3: Approximately 30 projects prepared for replication in facilities using modern biomass technologies	Standard questionnaire No. of energy audits, feasibility studies and business plans	Questionnaire 30 audits, feasibility studies and business plans developed	Questionnaires were sent to 200 relevant stakeholders 37 audits, feasibility studies and business plans developed for replication projects		185 questionnaires were completed and analysed in order to assess the actual situation of infrastructure on renewable energy technologies, human capacities and potential perspectives and to find out conclusions and recommendations for the improvement of infrastructure on renewable energy technologies.
Output 2.4: Tailored regulatory initiatives taken to ensure a sustainable	Specific targets for the heat produced by industrial-biomass energy	Specific targets for the heat produced by industrial-	12 specific targets are proposed to the relevant institutions.		An analysis of performance of energy in building, legal framework and

Project Strategy*	Indicator	EOP Target	EOP Status	Achievement rating	TE Comments
expansion of biomass energy use across industrial sectors	technologies by 2020 proposed. Amendments to the building code and building law to encourage the installation of industrial-biomass energy technologies when renovating proposed (including for public buildings) Tax exemptions on imported industrial-biomass energy technologies equipment and materials proposed Decree to set up an industrial-biomass energy technology quality control system corresponding (to the extent feasible) to the relevant EU regulations established and systems in place Proposals for Guarantee of Origin scheme and its operational framework	biomass energy technologies by 2020 proposed. Amendments to the building code and building law to encourage the installation of industrial-biomass energy technologies when renovating proposed Tax exemptions on imported industrial-biomass energy technologies equipment and materials proposed Decree established on industrial-biomass energy technologies quality control system Proposals for Guarantee of Origin scheme developed and consulted with stakeholders Proposals for operational framework developed	Recommendations given from the revised Energy Performance of Buildings Directive.		strategies are compared to the EU policy and practices. It is highlighted that the expansion of the use of biomass as source of heating energy in buildings has to be stimulated from the government through different incentives. Changes to the law on energy efficiency in Albania set mandatory energy efficiency targets for the public, private sector, and large consumers. The law obliges municipalities to prepare local action plans for energy efficiency Several proposals for amendments in the current legislation on renewable energy are discussed. The Guarantee of Origin mechanism was approved by the Albanian Energy Regulatory Authority (ERE) for all Renewable Energy Sources including biomass technologies.

Considering minor shortcomings of the Project mainly in regard to policy implementation as a basis for sustainability and further replication, the **overall project effectiveness is rated Satisfactory.**

Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
	S				

3.2.3.3 Global Environmental Benefits

Tables below summarize the GHG reduction estimates (using GEF guidelines) that were generated during the project implementation (to its estimated terminal date of June 30, 2021).

The Project has finally supported the installations of demonstration plants with a total thermal capacity of 2,704 kW_{th}, from which 880 kW_{th} were dedicated to 12 small units and 1,824 kW_{th} referring to one large unit (boiler + dryer) installed at AFT.

The GHG annual emission reductions are calculated as follows:

GHG emission mitigation = 275,804 ton per 20 years based on the following parameters:

The calculations for the CO_2 reduction are carried out based on the following assumptions: total biomass installed capacity 2,704 kWth; they are substituting diesel boilers with a share of 57.5% and coal boilers with a share of 42.5%. Diesel emission factor CO_{2eq}=0.2617 tons/MWh and Coal emission factor CO_{2eq}=0.3357 tons/MWh. Average emission factor CO_{2eq}=0.2931 tons/MWh. Total number of operating hours per year 7,200, based on energy audits carried out. Operation efficiency of the boiler equal to 62.5%.

Direct project GHG Emission Mitigation

Direct emission reductions within this project result from the investment in a minimum of 15 demonstration projects and in direct assistance in a further 30 replication or scale-up projects. 14 projects have actually been installed and commissioned during the project's 5-year implementation phase resulting in direct GHG emission reductions. For each of these projects an economic lifetime of 20 years was assumed.

Actual results:

- Total direct emission reductions of all small units implemented is 59,300 tonnes of CO_2 equivalent (tCO_{2eq}) over the lifetime of the investments, instead of projected 53,000 tCO_{2eq},
- Total direct emission reductions of large units implemented is 216,504 tCO_{2eq},
- Total direct emission reductions of all units implemented over the lifetime of investments is 275,804 tCO_{2eq},
- The project also has supported until EOP 37 potential small replication projects with energy audits, feasibility assessments and application of financing. The expected total lifetime GHG emission reduction of the assessed projects during project implementation was estimated to be 182,000 tCO_{2eq}.

Direct post-project GHG emission reductions

Although the project was to facilitate the financing of new biomass to energy projects beyond the implementation phase, this was not expected to use GEF funding, which would have been used during the project implementation phase only. Therefore, no direct post-project greenhouse gas emission reductions have been claimed.

Indirect GHG emissions reductions

The project is expected to catalyse significant further investment in biomass to energy technologies due to its policy, technical and capacity building activities that are designed to address the current barriers to investment. These are likely not only in the olive oil industry but also in other industries, resulting in indirect emissions reductions. Using the GEF bottom-up methodology and comparing it with the assumptions made in the CEO endorsement request document, indirect emission reductions attributable to the project are expected to be 546,000 tCO_{2eq}. This figure assumes a conservative replication factor of 3 (GEF uses 3 for a market transformation initiative and 4 where a credit guarantee is introduced). Replication Factor 2 is used as the most conservative value to calculate the indirect GHG emissions (equal to 364,000 tCO_{2eq}).

Using the GEF top-down methodology, indirect emission reductions attributable to the project are estimated at 240,000 tCO_{2eq}. This figure assumes that total technological and economic potential for GHG emission reductions in this area over the post-project 10 years is 400,000 tCO_{2eq}, with a project causality factor of 60 %, which takes into account the influence of the related existing government initiatives[15]. The following documents have integrated the use of biomass for energy: National Renewable Energy Action Plan (NREAP), the National Energy Strategy (2018) and the revised Nationally Determined Contribution (NDC) Action Plan (2021).

The range of indirect CO_2 emission reductions is 240,000 – 400,000 tCO_{2eq}.

The overall effectiveness of the Project has been evaluated **highly satisfactory**, since the Project achieved almost to full extent the results framework's targets, and overperformed on the environmental benefits with the amount of GHG emission reductions achieved.

Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
HS					

3.2.4 Efficiency

Project expenditures

A summary of the project expenditures (status June 2021) is provided in the table below.

Table 5: Project Budget and Expenditures (in USD)

Project Component	Budget approved (in USD)	Budget expenditure (as of 16 June 2021)		Funds available
	Planned	2016-2021	% of budget released	Total (USD)
Component 1 - Technology Demonstration	490 000	502 529.90	103%	-12 529.90
Component 2 -Enabling market environment for biomass	310 000	266 351.14	86%	43 648.86
Component 3 - Monitoring and Evaluation	45 000	38 689.52	86%	6 310.48
PMC - Management and Monitoring	82 000	95 387.41	116%	-13 387.41
TOTAL GEF	**927 000**	**902 957.97**	**97%**	**24 042.03**

Distribution of expenditures according to expenditure categories:

Table 6: Type of Expenditures (in USD)

Type of expenditure	Released Budget (a)		Obligation (b)	Payments (c)	Expenditure (b+c)	Funds Available (a-b-c)
	USD	%	USD	USD	USD	USD
Contractual Services	468 205.24	50.5%	9 142.40	431 281.08	440 423.48	27 781.76
Nat. Consultants/Staff	190 871.58	20.6%	3 646.71	177 989.18	181 635.89	9 235.69
Equipment	131 813.03	14.2%	0.00	134 850.67	134 850.67	-3 037.64
Other Direct Costs	64 976.83	7.0%	8.65	63 162.85	63 171.50	1 805.33
International Consultants/Staff	38 352.72	4.1%	11 063.13	42 705.43	53 768.56	-15 415.84
Local travel	17 418.79	1.9%	0,00	13 746.06	13 746.06	3 672.73
International Meetings	15 361.81	1.7%	0.00	15 361.81	15 361.81	0.00
Result	**927 000.00**	**100.0%**	**23 860.89**	**879 097.08**	**902 957.97**	**24 042.03**

On the utilization of funds, considering the outcomes and achievements of the project made, the cost-to-results ratio in overall terms seems fine. The grant support provided by the project for the implementation of eligible bioenergy technologies was agreed to be 50% of the total costs proposed by the applicants. The previous proposal of 30% was finally considered not to be sufficient and has initially not generated sufficient interest and applications from the enterprises. The agreement was finally made based on experts' inputs in agreement with the PSC and UNIDO with the condition that UNIDO was involved in the evaluation of offers and the expenditures for each applicant. The grant size was finally calculated as a percentage of the total eligible expenditure for the eligible investment implemented.

No detailed assessment of expenditures was made in the course of the TE process, since the output indicators have been mostly achieved. Majority of funds (~75%) have been used for contractual services/consultancies, about 15% for equipment expenditures, and the rest for other direct costs and local/international travels. Minor reallocations between the project components and budget lines are required to fit with the outstanding tasks and expenditures required.

Co-financing and in-kind contributions

The Project has benefited from additionally leveraged cash resources of about USD 1,150,000 from private sector (target enterprises). Compared to the initial plan, the number of financial institutions contributing financing resources (loans) to project sponsors has increased, although the total amount of financing provided was actually lower (1 million USD less) than foreseen. The issue with the banks' engagement in the project and financing of biomass energy technologies was linked to their actual capacity in offering a good financing product, including preferential interest rates. Banks like BKT did not issue any loan, others like ProCredit and San Paolo Bank have been more active, and new ones (First Investment Bank, OTP, Credins, Tirana Bank) entered into the project, but still with room to build/expand their dedicated credit lines once the demand for project financing increases.

However, the confirmed Project co-financing till the end of the project has amounted to an estimated USD 4.63 million (3.17 million without governmental and UNIDO's co-financing) or 3% more compared to the contributions sourced at project design stage, which can be counted successful. Details are provided in the Table 7 below.

Table 7: Co-financing of Project Partners (in USD)

Co-financing (million USD)	Planned (USD)	Realized (latest figure) (USD)
Min. of Tourism and Environment (Cash)	80,000	80,000
Min. of Tourism and Environment (in-kind)	100,000	100,000
Ministry of Energy and Industry (cash)	590,000	590,000
Ministry of Energy and Industry (in-kind)	590,000	590,000
Private sector (target enterprises)	225,000	1,370,000
Local financial institution (BKT) – credit loan	942,000	20,000
Local financial institution (ProCredit) – credit loan	940,000	490,000
Local financial institution (Intesa San Paolo Bank) – credit loan	940,000	270,000
Local financial institution (First Investment Bank) – credit loan	-	551,000
Local financial institution (OTP Bank) – credit loan	-	400,000
Local financial institution (Credins Bank) – credit loan	-	38,000
Local financial institution (Tirana Bank) – credit loan	-	30,000
UNIDO (cash)	50,000	50,000
UNIDO (In-kind)	50,000	50,000
Total	**4,507,000**	**4,629,000**

Explanations on the provision of cash and in-kind sources:

Ministry of Tourism and Environment:

- Funds from the Ministry of Tourism and Environment have been used to finance a feasibility study for the management of waste from five municipalities in Albania and to provide recommendations for waste management. These recommendations have been integrated in the local action plans, best practices and

standards for waste management. An objective of this study was to explore the potential that these municipalities have to generate energy from waste and how they can implement and monitor this objective. The methodology and standards of this pilot project will be shared with other municipalities for replication (technologies and the processes of waste management).

- In the Strategy Policy Paper and Integrated National Waste Management Plan (2020-2035) the main aim is the transition from linear economy to a circular economy. This document develops on the vision or perception of the "zero waste" concept, that waste is collected and treated as raw material and management is to be done in accordance with the concept of circular economy systems, to benefit the standardized use and preservation of raw material resources.

Ministry of Infrastructure and Energy:

With the funds provided by the MoIE the following policy-related activities have been implemented, with a focus on the use of biomass for energy. Some of the initiatives where co-financing was provided are listed below:

- The current National Renewable Energy Action Plan (NREAP) sets a target of 38% for the renewable energy share of total final energy consumption by 2020.
- The NREAP also stipulates technology-specific deployment targets to achieve this goal: 41 MW waste-to-power by 2020, which have not yet been reached.
- The National Energy Sector Strategy (2018) formulates a target of 42% of renewable energy by 2030
- A National Energy and Climate Plan (NECP) is under development and will set out renewable energy targets up until 2030.
- The Republic of Albania is a signatory Party of the United Nations Framework Convention on Climate Change (UNFCCC). In line with UNFCCC guidelines, Albania prepared a document outlining the actions it planned to undertake to address climate change, also known as Nationally Determined Contribution (NDC), in 2015. Albania signed the Paris Agreement, the most ambitious multilateral climate change agreement, in April 2016. In order to achieve its objective, all Parties to this agreement are expected to update and enhance their NDC every 5 years.
- Albania joined the NDC Partnership and committed to update and enhance in 2020/2021 the NDC. Albania aims to increase its mitigation ambition, expanding the sectors and include adaptation measures. The country's NDC will also show the consistency and accuracy of mitigation calculations in a transparent manner, and the fairness of its ambition, and present Albania's national circumstances.
- In addition, contributions have been made for introducing new biomass heating systems with olive oil pomace and solar hot water heaters for meeting space heating and water heating energy demand for 10 schools in Lezhe and Lushnje, Permet and Gjirokastra.
- Contribution to the construction of 2 incinerators in Elbasan and Fier. Waste-to-energy facilities, waste treatment processes that also include biomass waste.

The overall efficiency of the Project has been evaluated **highly satisfactory**, since Project expenditures achieved reflect achievements and follow almost to full extent the results framework's targets, as described in section 3.2.3.2, and additional co-financing means have been leveraged throughout the project.

Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
HS					

3.2.5 Impacts and Sustainability

The following rating is applied in evaluating the Project's impacts and sustainability prospects:

- 4 = Likely (L): negligible risks to sustainability;
- 3 = Moderately Likely (ML): moderate risks to sustainability;
- 2 = Moderately Unlikely (MU): significant risks to sustainability; and
- 1 = Unlikely (U): severe risks to sustainability.

3.2.5.1 Likelihood of Impact

Given its focus on addressing policy and technical capacity barriers, this project will generate the biggest share of GHG emission savings after the project implementation period, when the new policies would be in place, capacity built, and the training programmes established that will deploy their full impact in terms of new biomass energy projects.

This project has been designed to result in:

- Direct emission reductions of 53,000 tCO_{2eq} through its demonstration activities
- Target investment levels of 2.8-4.2 million USD by the end of the project (leveraging at least 3 million USD for a 3:1 leverage ratio)
- Direct energy generation from demonstration projects totalling 16,000 MWh
- Post-project indirect emission reductions of 240,000-318,000 tCO_{2eq} due to increased awareness and capacity to develop and finance biomass energy projects

The achievement of impacts by the Project is contingent to achievement of the demonstration and market development/replication components.

- Impact on CO_2 equal to 275,804 ton/ (20 years); energy production equals to 694.3 GWh/ (20 years).
- The level of investment facilitated through the project was at least 3.17 million USD, from which 1.37 million USD have been cash resources mobilized by the private enterprises in addition to approx. 1.8 million USD provided as loans from the local banks. The grant leverage ratio was therefore 3:1.
- It has worked continuously and closely during the last five years with olive oil companies, biomass pellet boilers suppliers, together with the GoA and UNIDO and four important Banks in Albania: BKT, CREDINS, ProCredit Albania and Albanian Institutions for the promotion of olive pomace including wood processing, wine production and jam-fruit production. In particular, the project served to prepare energy audits, TA for project feasibility/design, business plan development, and projects to be made ready bankable and financed by commercial banks.
- As a result, ~15 olive oil companies have made actual investment plans for exploiting olive oil production and intending to use the olive pomace as a local renewable resource against the import of diesel and investing in state-of-the-art technologies. The experience gained in the project design, implementation and operation will provide increased experience in the Albanian market and attract other companies in that field or similar industries to use biomass residues for energetic purposes in the future. Especially the olive oil industry in Albania is expecting a huge growth in the local production facilities and productivity (estimation: annual olive production to increase from ~100,000 tons in 2020 to about 800,000 tons in 2030). With that increase in mind, the impact of the project on the national energy balance and energy produced from the amount of biomass residues is expected to grow in an equivalent manner.
- Apart from the biomass residues being used in agricultural industries, there is a huge potential to use olive pomace for space heating in e.g. public buildings (schools, kindergartens) and residential sector. With the supply of pomace and other residues to increase significantly, the demand for new applications is likely to increase, which will positively affect the energy balance and reduce dependency on imported fossil fuels.
- Favourable policy and regulatory environment have been created for biomass energy applications in industry. The policy framework is required to ensure political targets being congruent with market potentials, and by introducing an aligned policy framework and quality standards it needs to ensure that the biomass energy technology will evolve and enhance penetration and scaling up in the country. Waste treatment technologies aimed at energy recovery may represent an interesting alternative for a sustainable disposal of residues from olive oil production, able to reduce the environmental impact and to generate heat energy for sale or satisfy the needs of olive mills.
- Development and implementation of projects in the field of renewable energy requires an adequate education system on renewable energy. In Albania the education system on renewable energy comprises the secondary, high schools and universities. Renewable energy as a concept, module, lectures or part of master courses is included in several study programs and universities. The main universities that offer modules and study programs on renewable energy are Agricultural University of Tirana (AUT), Polytechnic University of Tirana (PUT) and University of Tirana (UT). With the support of the project, new curricula have been developed on renewable energies providing the ground for continued education in the academic field.

Hence, based on the above, the TE concludes that the Project has achieved its expected impact is Likely (L).

3.2.5.2 Prospects of Sustainability

In the context of this project, sustainability is understood as the probability of continued long-term project-derived results and impacts, after the external project funding and assistance has ended. The sustainability of the Biomass Project has been assessed on four dimensions:

Technology and operations. The 15 business cases demonstrated in the project have proven that biomass energy technologies in Albania can be used at a commercial level, however still at an initial stage of development considering the large potential across the agro-industry sector and the relatively low number of projects that have been supported. Success factors of the project have been the technical assistance provided from the beginning, i.e. selection of prospective applicants/beneficiaries, support in the technical and economical assessment of their business cases, development of business plans, methodologies for doing energy assessments and energy audits at facilities, and providing grant support/financing support for the implementation. While design and engineering issues have been be addressed by this Project, it is anticipated that associated technological risks such as low experience with this technology and sufficient amount of industry-like BET systems supplied on the Albanian market will remain low and will be mitigated by a steadily growing demand for this technology. Hence, the overall risk of technology and operations remains manageable; therefore, the *technical sustainability of the Biomass Project is rated as likely (L)*.

Institutional framework and governance. The Project has benefited from institutional and governance support described in detail in the Report "Policy and regulatory initiatives to support the sustainable expansion of bio-energy use across industrial sectors in Albania". A number of the legal framework, policies, programs, strategies and action plans related to energy production from biomass and industrial waste management are in place in Albania. Furthermore, in accordance with EU legislation and the Energy Community Treaty, the Government of Albania and the Energy Regulatory Authority (ERE) have already adopted a number of secondary and regulatory acts. However, there are many amendments that have to be integrated in the reviewed documents to ensure a sustainable expansion of bio-energy use and sustainable waste management, especially on support and promotion of the heating using biomass with high efficiency for local heating systems, which are still underdeveloped and in the initial step. In order to increase the interest of investors for applications and implementation of projects on bio-energy production in Albania some progresses are achieved as the licensing process has been improved, but specifically the financial incentives have to be further developed, through measures such as direct investment support, capital grants, low interest loans, tax exemptions or reductions, tax reimbursement etc. *With these institutional/political developments considered to a large extent progressing but still under development, the Project is rated Moderately Likely (ML) on institutional sustainability.*

Financial sustainability. BET is a proven technology, the benefits of which are well understood, however require enough demonstrations that increase the acceptance among agro-industrial members and for them considering biomass residues a favourable source to cover their growing energy demand. In terms of financial aspects, increasing the penetration of BET throughout the UNIDO-GEF project with a combined grant and financing scheme and local commercial banks continuing to develop their product offering will continuously reduce the financial risk, since costs of installations will go down. Considering these aspects, *financial sustainability of the BET project is rated as Likely (L).*

Environmental sustainability. There are no significant environmental degradation issues related to the Biomass Project. The project is aligned with national policies and strategies, and the environmental benefits are obvious in terms of use of residues from agricultural production and the valuation of former considered wastes as resources that will allow their productive use and simultaneously lead to a reduction of greenhouse gas emissions across the country. *Environmental sustainability of the Project is rated Likely (L).*

The overall rating is equivalent to the lowest sustainability ranking score of the 4 dimensions. Referring to the dimensions of sustainability presented in the paragraphs below, the overall prospects of sustainability of the Biomass Albania Project are considered to be Moderately Likely.

Likely	Moderately Likely	Moderately Unlikely	Unlikely
	ML		

3.3 Cross-cutting issues

3.3.1 Project coordination and management

UNIDO as the GEF Implementing Agency held the ultimate responsibility for the implementation of the Project, the delivery of the planned outputs and the achievement of the expected outcomes. UNIDO was responsible for monitoring of the Project, and reporting on the project performance to the GEF. The project was managed by UNIDO project manager at Vienna, having it directly executed by the Project Management Unit (PMU) located at UNIDO Tirana office.

The project management structure is shown in the figure below.

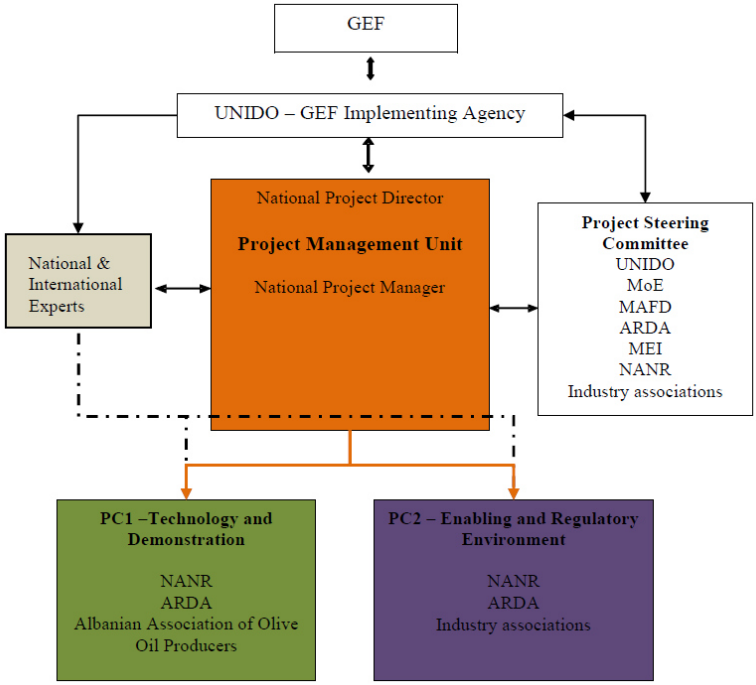


Figure 2: Project Management Structure (from CEO Endorsement Document)

Compared to the project design, as mentioned in section 3.2.2, the cooperation with ARDA could not be established, that's why ARDA was not formally involved in the PSC as well as project implementation

The project was implemented based on the UNIDO National Implementation Modality (NIM). During the inception phase the **Project Management Unit (PMU)** was nominated based on the proposed organization structure foreseen in the Project Document. It consisted of National Project Director, a National Project Manager and associated national and international experts who managed in co-operation with UNIDO's Project Manager the Project on a daily basis.

The project received high level guidance and oversight from the **Project Steering Committee (PSC),** which was chaired by the Ministry of Tourism and Environment being the Executing Agency. The PSC was responsible for making management decisions on a consensus basis for the Project when guidance was required by the Project Manager, including approval of project revisions. There were three formal PSC meetings in the course of project; project assurance reviews were made by the PSC at designated decision points during the running of a project and throughout the duration in regular in-place and online meetings or as necessary when raised by the Project Manager. In this sense, the PSC provided important input to the PMU in adaptive project management, and in general very positive feedback was provided throughout the evaluation mission regarding the level of cooperation between involved governmental entities and UNIDO.

Members of the PSC were interviewed during the evaluation mission and they also expressed their full satisfaction on the project implementation arrangements and the PMU's role there, especially on receiving relevant and timely information throughout the project implementation, to perform their expected duties and to express their views in the Board meetings, which have been well documented.

Overall conclusion is that the project management has achieved appropriate partnerships with relevant national stakeholders (ministries, private sector, refer also to section 2.2.2 and financing sector) and participation of these national stakeholders is visible throughout the whole project and beyond. Governmental stakeholders have supported the objectives of the project and were involved in strategic decision-making and setting directions through the PSC.

The overall project management arrangements are rated Highly Satisfactory.

Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
HS					

3.3.2 Monitoring and evaluation

M&E Design

The Project Document included a generic monitoring and evaluation (M&E) plan to monitor results and track progress towards achieving project objectives. Formal M&E of the project was to follow the principles, criteria and minimum requirements set out in the GEF Monitoring and Evaluation policy in its current version and the respective guidelines and procedures issued by the GEF Evaluation Office and/or the GEF Secretariat. At the same time, M&E was supposed to comply with the rules and regulations governing the M&E of UNIDO technical cooperation projects, in particular the UNIDO Evaluation Policy and the Guidelines for Technical Cooperation, both in their respective current versions.

The National Project Manager was responsible for day-to-day and local management of project activities execution, performance and track progress towards milestones. This also included monitoring and evaluation of the demonstration projects with respect to energy generation, technical performance, commercial viability and GHGs emission reduction, and related information.

The UNIDO project manager was responsible for oversight and tracking overall project milestones and progress towards the attainment of the set project outputs. The UNIDO project manager was furthermore responsible for narrative reporting to the GEF, and the preparation of Annual Project Implementation Reviews (PIR).

M&E Implementation

The project management team seemed to have followed a practical, ad-hoc and adaptive approach to M&E of the project, which, looking at the positive results of the Project achieved, was functioning on an adequate level for day-to-day decisions and adaptations. "SMART" indicators for reviewing implementation and results were in principle available from the Project log frame.

UNIDO PM and financial staff continuously monitored the Project based on their internal regulations and rules. Project Implementation Reports were submitted yearly and several missions to the project were implemented (incl Back-to-Office Mission Reports). Staff contracting, and subcontracting was monitored according to in house UNIDO standards. Financial disbursement of the GEF and UNIDO funding was continuously monitored and reported. However, substantive evaluations on methodologies or approaches were not requested from the PMU and thus have not been provided.

Monitoring of long-term changes

The Project does not have a component on the monitoring of long-term changes in the design or implementation. However, the CEO Endorsement Document has foreseen the development of a ***detailed monitoring plan*** for tracking and reporting on project time-bound milestones and accomplishments. Annual reports in log-frame are used to continuously monitor the activities accordingly. The monitoring plan shall track, report on and review project activities and accomplishments in relation to:

(a) Renewable energy heat delivered within olive oil factories (including outside residential, private and public buildings which are going to use pellets/briquettes for meeting space heating and water heating energy demand) and GHGs emission reductions directly generated by the UNIDO GEF project. These will include the type and the number of projects developed and implemented.
(b) Renewable energy heat generation within olive oil factories (and outside them) and GHGs emission reductions in-directly generated by the UNIDO GEF project. These will include type and the number of

projects developed and implemented due to the increased capacity and conducive environment for the renewable energy projects.

(c) Renewable energy investment generated by the UNIDO GEF project, directly and indirectly
(d) Development of policy, legislative and regulatory frameworks aimed to promote and support the SME waste of olive oil industry and transforming them to be ready for utilisation to energy market
(e) Level of awareness and technical capacity for the use of olive oil waste for energy within relevant institutions, in the market and within enterprises.
(f) Overall socio-economic impacts of the project to include increase in productive capacities, access to modern energy services, cost-effectiveness and gender equality.

A detailed plan for the monitoring of GHG emission reductions was not in place and therefore happened only in the course of the final evaluation of the project. However, the project activities and results were continuously monitored within the PSC meetings and throughout ongoing information exchange among project partners. Considering the fact that objective indicators at objective and outcome level have been achieved, the **M&E plan implementation is considered to be Satisfactory.**

Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
	S				

3.3.3 Gender Mainstreaming

In order to provide practical guidance on how to systematically address existing or potential gender inequalities specific to UNIDO's interventions, a tailored guide was developed aimed at helping UNIDO's staff to apply a gender perspective to their work and, more specifically, to mainstream gender throughout the project cycle. In general, almost all olive oil and food processing SMEs in Albania are located in villages and small towns, where unemployment ratios are high at the level of 20-25%. Women constitute at least 50% of the work force in these enterprises. In this context, explicit attention was given to ensuring that both women and men participate in and benefit from capacity-building activities and training. All stakeholders are gender-sensitized and aware on the benefits of gender mainstreaming. Associations and networks focusing on gender equality and women's empowerment were included from the beginning in the awareness-raising workshops. Furthermore, clear and functional technical guidelines are developed to facilitate gender mainstreaming in the business models.

Support in strengthening SMEs through utilization of biomass energy will promote favourable social and economic conditions of women entrepreneurs and workers in these regions. The project will raise employment opportunities in rural areas where unemployment (especially women) is a particular problem. Moreover, the multi-stakeholder partnership and gender balanced composition during the meetings are praised reflecting the importance of gender equality and women's empowerment. Women are involved in all the activities of the project: preparatory meetings for gathering data and exchanging views, in their roles as producers, sellers, managers, promoters, and most importantly leaders of the olive oil sector in Albania.

In order to ensure women's leading role in the project the following issues were considered:

- The facilities needed that women not only contribute to, but also lead the dialogue on bio-energy issues in Albania (the role of the Association of Olive Oil producers where the Chair is a woman);
- How can women as leaders be promoted so that they are included in every step of the project and participate in all the discussions at the national level; and
- What are the best practices needed to empower women to become key players in the sector.

Renewable energy projects can enhance women's economic autonomy and social status, allowing them to earn an income and giving them the opportunity to take part in and drive sustainable development of their local communities especially in the rural olive grow zones. Production of olive pomace will help women to get an important and clean energy source, at low cost, with low time consumption for collecting energy (fuel wood), reduce deforestation and use the time in a more effective way for children education in Albanian villages.

More so than men, however, women entrepreneurs face barriers, such as lack of access to information about new forms of energy, lack of education and training on business management and technical aspects of renewable energy technology, and lack of access to credit and other financial services necessary to start-up businesses. Moreover, in some countries, gender stereotypes in the labour market reinforce the conception that modern

energy technology businesses are “men’s work”, while women are expected to operate more traditional, and less proficient, biomass-based micro-enterprises. These aspects have been considered and mitigated very well from the side of the involved consultants and the Project Coordinator during the selection of participants in six workshops carried out with four Banks, AKBN and Albanian Association of the Olive Oil Producers.

Moreover, during several meetings, the multi-stakeholder partnership and the gender composition of the meetings (more women than men) was praised. Sex-disaggregated data was collected wherever possible. In total, in the six workshops the percentage of women’s participants has been ~44% (110 women out of 255 participants).

All in all, the project interventions have helped to contribute to better gender equality and gender-related dimensions, with significant involvement of women throughout the activities. **Gender mainstreaming is considered to be Satisfactory.**

Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
	S				

4 Annex

4.1 Annex 1: TOR

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	International evaluation consultant, team leader
Main Duty Station and Location:	Home-based
Missions:	Missions to Vienna, Austria and Albania (to be discussed in case of lifting of COVID-19 related travel restriction and reduced health risks)
Start of Contract (EOD):	01/08/2020
End of Contract (COB):	30/11/2020
Number of Working Days:	30 working days spread over 4 months

ORGANIZATIONAL CONTEXT

The United Nations Industrial Development Organization (UNIDO) is the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization and environmental sustainability. The mission of UNIDO, as described in the *Lima Declaration* adopted at the fifteenth session of the UNIDO General Conference in 2013, is to promote and accelerate inclusive and sustainable industrial development (ISID) in Member States. The relevance of ISID as an integrated approach to all three pillars of sustainable development is recognized by the 2030 Agenda for Sustainable Development and the related Sustainable Development Goals (SDGs), which will frame United Nations and country efforts towards sustainable development in the next fifteen years. UNIDO's mandate is fully recognized in SDG-9, which calls to "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation". The relevance of ISID, however, applies in greater or lesser extent to all SDGs. Accordingly, the Organization's programmatic focus is structured in four strategic priorities: Creating shared prosperity; Advancing economic competitiveness; Safeguarding the environment; and Strengthening knowledge and institutions.

Each of these programmatic fields of activity contains a number of individual programmes, which are implemented in a holistic manner to achieve effective outcomes and impacts through UNIDO's four enabling functions: (i) technical cooperation; (ii) analytical and research functions and policy advisory services; (iii) normative functions and standards and quality-related activities; and (iv) convening and partnerships for knowledge transfer, networking and industrial cooperation. Such core functions are carried out in Departments/Offices in its Headquarters, Regional Offices and Hubs and Country Offices.

PROJECT CONTEXT:

UNIDO in association with the Ministry of Tourism and Environment and other government partners is currently implementing the project: "Biomass energy for productive use for small and medium enterprises (SMEs) in the olive oil sector" in Albania. The project will increase the use of biomass in industrial energy consumption for productive use with the overall aim to reduce greenhouse gas (GHG) emissions, increase energy independence and improve competitiveness of the national economy through low-carbon industrial development.

The objective of the project is to help create a market environment to increase the use of biomass waste based energy technologies for industrial processes in Albania. The main aim of the GEF project will therefore be to demonstrate the energy generation from olive residues through modern biomass technologies and trigger a transformational effect throughout the olive oil and other sectors. Based on the experience gained through the demonstration projects, and supported by tailored capacity building in the target sectors, involvement of the financial sector and a detailed understanding of the economic potential of the industrial sectors, the project will contribute to the creation of a business environment enabling private sector investment.

The selected project strategy will build on two favourable factors namely; the high commitment by the government to the development of modern biomass energy, and significant interest by the private sector to invest in more efficient technologies.

The project consists of two technical components, as below, plus monitoring and evaluation and project management:

- Demonstration of the technical feasibility and commercial viability of modern biomass technologies in the olive production sector in Albania at a minimum of 15 olive oil factories. These will create best practice examples for the country for further dissemination and to help raise awareness.
- Development of the market environment for biomass technology in industry in Albania through: enhancing awareness and strengthening capacities for key actors in the policy and industrial sectors (in the olive oil and other sectors with high replication potential such as wood processing, wine production, jam-fruit production), as well as supporting tailored policy actions and scale-up activities including the preparation of a detailed assessment of the biomass potential for industrial uses and the development of a pipeline of projects for replication.

Primary target beneficiaries of the project are energy and waste management policy-making implementing institutions, primarily Ministry of Tourism and Environment, Ministry of Infrastructure and Energy, National Agency of Natural Resources, industrial/agriculture-processing owners (end beneficiaries), industrial associations and suppliers, engineers and designers.

Further details on the scope of work are provided in the table below.

Detailed background information of the project can be found the terms of reference (TOR) for the terminal evaluation.

The international evaluation consultant/team leader will evaluate the project in accordance with the evaluation-related terms of reference (TOR). He/she will perform, inter alia, the following main tasks:

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
Undertake a desk review of project documentation (incl. familiarization with the GEF programmes and strategies, and with relevant GEF policies such as those on project cycle, M&E, co-financing, fiduciary standards, gender, and environmental and social safeguards) and relevant country background information (national policies, regulations and strategies, UN strategies and general economic data); determine key data to collect in the field and adjust the key data collection instruments accordingly (if needed); Assess the adequacy of legislative and regulatory framework relevant to the project's activities and analyze other background info.	• Division of evaluation tasks with the National Consultant • An adjusted table of evaluation questions, depending on Albania context • A draft list of stakeholders including pilot plants to be interviewed during the evaluation field mission (by the national evaluation consultant if the travel to Albania restricted due to COVID-19) • A brief assessment of the adequacy of the country's legislative and regulatory framework	5 days	Home-based
Prepare an inception report which streamlines the specific questions to address the key issues in the TOR, specific methods that will be used and data to collect in the field visits, detailed evaluation methodology confirmed, draft theory of change, and tentative agenda for field work	Inception report submitted to the evaluation manager	3 days	Home-based
Briefing with UNIDO project managers and other key stakeholders at UNIDO HQ.	Detailed evaluation schedule with tentative mission agenda (incl. list of stakeholders to be interviewed and planned site visits) submitted to evaluation and project manager	2 days	Home-based
3. Undertake evaluation field mission[1] to consult field project stakeholders, partners and beneficiaries to verify and complete preliminary evaluation findings from desk review and assess the institutional capacities of the recipient country	• Field mission conducted • Evaluation/debriefing presentation of the evaluation's preliminary findings prepared, draft conclusions, recommendations and lessons learnt to stakeholders in the country, at the end of the mission	8 days	Home-based

[1] The exact mission dates will be decided in agreement with the Consultant, UNIDO HQ, and the country counterparts.

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
	• Agreement with the National Evaluation Consultant on the structure and content of the evaluation report and the distribution of writing tasks		
4. Debriefing mission: Present preliminary findings, recommendations and lessons learnt to project stakeholders at UNIDO HQ for factual validation and comments Hold additional meetings with and obtain additional data from evaluation/project manager and other stakeholders as required	• Power point presentation • Feedback from stakeholders obtained and discussed • Additional meetings held as required	2 days	Vienna, Austria
5. Prepare the draft evaluation report, with inputs from the National Consultant, and in accordance with the evaluation TOR Submit draft evaluation report to the evaluation manager for feedback and comments	• Draft evaluation report submitted to evaluation manager for review and comments	6 days	Home-based
6. Revise the draft evaluation report based on comments and suggestions received through the evaluation manager and edit the language and finalize the evaluation report according to UNIDO standards Formulate recommendations for future improved project design and implementation Prepare a two pages summary of a take-away messages from the evaluation	Final evaluation report submitted to evaluation manager Two pages summary including take-away messages from the evaluation and recommendations submitted to the evaluation manager	4 days	Home-based
	TOTAL	**30 days**	

REQUIRED COMPETENCIES

Core Values

WE LIVE AND ACT WITH INTEGRITY: work honestly, openly and impartially.
WE SHOW PROFESSIONALISM: work hard and competently in a committed and responsible manner.
WE RESPECT DIVERSITY: work together effectively, respectfully and inclusively, regardless of our differences in culture and perspective.

Key Competencies

WE FOCUS ON PEOPLE: cooperate to fully reach our potential –and this is true for our colleagues as well as our clients. Emotional intelligence and receptiveness are vital parts of our UNIDO identity.

WE FOCUS ON RESULTS AND RESPONSIBILITIES: focus on planning, organizing and managing our work effectively and efficiently. We are responsible and accountable for achieving our results and meeting our performance standards. This accountability does not end with our colleagues and supervisors, but we also owe it to those we serve and who have trusted us to contribute to a better, safer and healthier world.

WE COMMUNICATE AND EARN TRUST: communicate effectively with one another and build an environment of trust where we can all excel in our work.

WE THINK OUTSIDE THE BOX AND INNOVATE: To stay relevant, we continuously improve, support innovation, share our knowledge and skills, and learn from one another.

Managerial and Leadership Competencies (as applicable)

WE ARE STRATEGIC, DECISIVE, PRINCIPLED AND INSPIRATIONAL: As managers, we are strategic and fair in driving our team's performance. As leaders, we are a source of inspiration, stand for norms and standards established in the UN Charter and duty bound to defend these ideals with a principled approach.

WE ARE INCLUSIVE AND ACCOUNTABLE: As managers, we are inclusive in our approach and maintain constructive engagement with all our stakeholders. As leaders, we embrace all personnel and stakeholders and are accountable mutually within UNIDO, within the system, to beneficiaries and the public and beyond.

WE ARE MULTI-DIMENSIONAL AND TRANSFORMATIONAL: As managers, we go beyond conventional methods to help our organizational units strengthen their own agility and adaptability to change. As leaders in the UN system, we have a vision which is integrated and engaged across the pillars of Peace and Security, Human Rights and Development.

WE ARE COLLABORATIVE AND CO-CREATIVE: As managers, we foster a team spirit and create meaningful opportunities to hear the voices of those around us, while realizing that only by working together can we accomplish our mission. As leaders we see the inter-dependency of imperatives of the UN Charter and personally champion a collaborative inter-agency, multi-stakeholders and cross-thinking approach.

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education: Advanced degree in environmental studies, climate change, engineering, energy, development studies or relevant areas

Technical and functional experience:

- Minimum of 10 years' experience in evaluation of development projects or project management on sustainable energy/environmental technologies including social safeguards and gender aspects
- Knowledge on GEF operational programs, strategies and policies such as those on project life cycle, M&E, incremental costs, and fiduciary standards, GHG emissions reduction targets
- Experience in the evaluation of GEF projects and knowledge of UNIDO activities an asset
- Knowledge about multilateral technical cooperation and the UN, international development priorities and frameworks

- Working experience in developing countries and knowledge on the needs, conditions and problems in developing countries.

Languages: Fluency in written and spoken English is required.

Reporting and deliverables

1) At the beginning of the assignment the International Evaluation Consultant will submit a concise Inception Report that will outline the general methodology and presents a concept Table of Contents

2) The country assignment will have the following deliverables:

- Presentation of initial findings of the mission to key national stakeholders
- Draft report
- Final report, comprising of executive summary, findings regarding design, implementation and results, conclusions and recommendations

3) Debriefing at UNIDO HQ:

- Presentation and discussion of findings
- Concise summary and comparative analysis of the main results of the evaluation report

All reports and related documents must be in English and presented in electronic format.

Absence of conflict of interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with UNIDO.

4.2 Annex 2: Evaluation Criteria Matrix

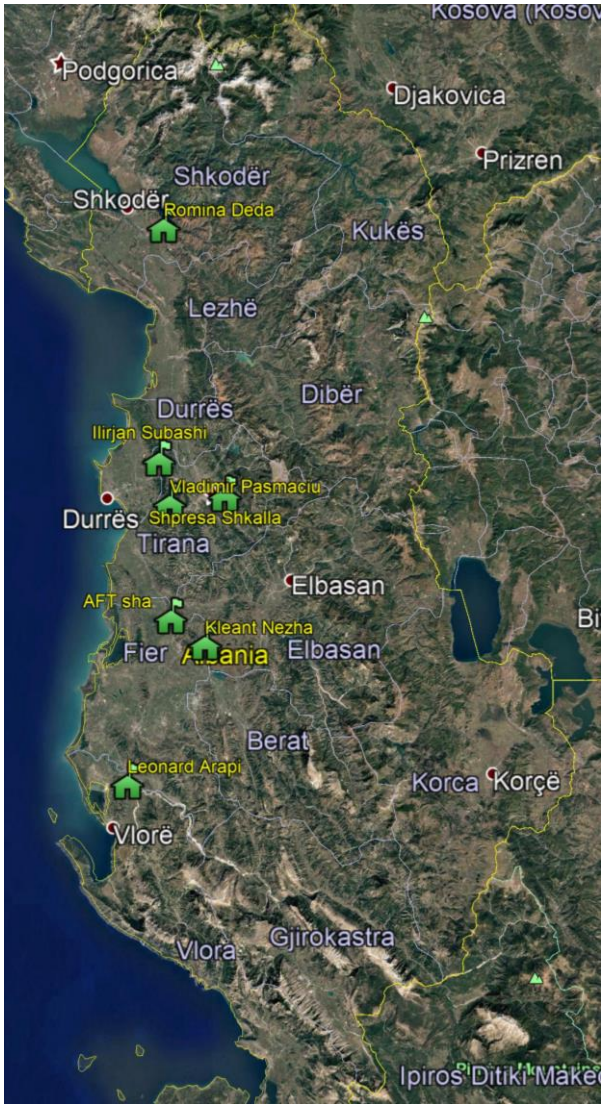
Ratings for Progress Towards Results: (one rating for each outcome and for the objective)		
6	Highly Satisfactory (HS)	The objective/outcome is expected to achieve or exceed all its end-of-project targets, without major shortcomings. The progress towards the objective/outcome can be presented as "good practice".
5	Satisfactory (S)	The objective/outcome is expected to achieve most of its end-of-project targets, with only minor shortcomings.
4	Moderately Satisfactory (MS)	The objective/outcome is expected to achieve most of its end-of-project targets but with significant shortcomings.
3	Moderately Unsatisfactory (HU)	The objective/outcome is expected to achieve its end-of-project targets with major shortcomings.
2	Unsatisfactory (U)	The objective/outcome is expected not to achieve most of its end-of-project targets.
1	Highly Unsatisfactory (HU)	The objective/outcome has failed to achieve its midterm targets, and is not expected to achieve any of its end-of-project targets.

Ratings for Project Implementation & Adaptive Management: (one overall rating)		
6	Highly Satisfactory (HS)	Implementation of all seven components – management arrangements, work planning, finance and co-finance, project-level monitoring and evaluation systems, stakeholder engagement, reporting, and communications – is leading to efficient and effective project implementation and adaptive management. The project can be presented as "good practice".
5	Satisfactory (S)	Implementation of most of the seven components is leading to efficient and effective project implementation and adaptive management except for only few that are subject to remedial action.
4	Moderately Satisfactory (MS)	Implementation of some of the seven components is leading to efficient and effective project implementation and adaptive management, with some components requiring remedial action.
3	Moderately Unsatisfactory (MU)	Implementation of some of the seven components is not leading to efficient and effective project implementation and adaptive, with most components requiring remedial action.
2	Unsatisfactory (U)	Implementation of most of the seven components is not leading to efficient and effective project implementation and adaptive management.
1	Highly Unsatisfactory (HU)	Implementation of none of the seven components is leading to efficient and effective project implementation and adaptive management.

Ratings for Sustainability: **(one overall rating)**		
4	Likely (L)	Negligible risks to sustainability, with key outcomes on track to be achieved by the project's closure and expected to continue into the foreseeable future
3	Moderately Likely (ML)	Moderate risks, but expectations that at least some outcomes will be sustained due to the progress towards results on outcomes at the Midterm Review
2	Moderately Unlikely (MU)	Significant risk that key outcomes will not carry on after project closure, although some outputs and activities should carry on
1	Unlikely (U)	Severe risks that project outcomes as well as key outputs will not be sustained

4.3 Annex 3: Site visits

A summary of the site visits conducted by the local TE expert is provided below.



Name of the beneficiary:	**Ilirjan Subashi**
Address:	Marikaj, Vore, Albania
Contact:	+355684094219

Main findings:

During the site visit, we had the possibility to visit and see the olive oil factory.

- The olive oil factory named “SUBASHI” is well known in the national market
- Main market is the national market, while some few amount of the olive oil is exported in the EU countries.
- The project contributed with a boiler (value reimbursed 4,155.00 EUR)
- Using of the olive pomace as bioenergy source, brings the profit of 4-5000 US$ per year.

- For the year 2020 the amount of biomass from pomace was around 400 tons (no statistics were kept by the owner)
- The energy produced from pomace was used for boiling the water for factory and for heating the house.
- One of the best things we saw there was the fact that the owner decided to use even branches or other parts of the olive trees to make handicrafts (artisans) with the woods. This provided a lot of additional incomes and bring the business to a circular economy.
- The owner of factory was very happy not only because of the financial support received but mostly because the new way of using the pomace as energy source bringing in this way to a very environmentally friendly activity.
- Practically, no waste is coming out from the business activity in this factory
- The business as all other around Albania are suffering because the lack of marketing for their products. This needs to be improved in the future.

Name of the beneficiary: Kleant Nezha

Address: Fshati Kosove e Vogel, (Fieri region), Albania

Contact: +355 682472432

Main findings:

During the site visit, we had the possibility to visit and see the olive oil factory and the business related to the support of UNIDO project.

- The olive oil factory named “NEZHA” is well known in the area where it is located
- Main market is the national market, some restaurants, food enterprises etc.
- The project contributed with olive pomace boilers for the greenhouses (value reimbursed 37,500.00 EUR)
- The olive pomace boilers are used in his greenhouses with an area of 11,000 m2.
- Mr. Nezha was very happy about the UNIDO project support because it introduced a completely different way in doing business in both; olive oil production and activities in greenhouse.
- Using of the olive pomace as bioenergy source, it provides a profit of more than 5500 US$ per year.
- For the year 2020 the amount of biomass from pomace was around 200 tons (no statistics were kept by the owner)
- The energy produced from pomace was used for boiling the water and used only in greenhouse.
- Practically, no waste is coming out from the business activity in this factory
- In the factory there were around 3 tons of olive oil in stock.
- The business is suffering because of the lack of marketing for its olive oil products. Other issues are the lack of labelling and packaging the olive oil. This needs to be improved in the future.

Name of the beneficiary: Shpresa Shkalla

Address: Lunder, Tirana, Albania

Contact: +355 672068924

Main findings:

During the site visit, we had the possibility to visit and see the olive oil factory and the business related to the support of UNIDO project.

- The project contributed with an olive pomace/pellet boiler and decanter (value reimbursed 56,313.00 EUR).
- The olive oil factory "Shkalla SH" shpk is very well known in Albania and abroad.
- The owner (Shpresa Shkalla) is member of the Olive Oil Association in Albania.
- EECG helped in developing the feasibility study, business plan and organized meetings with other members of the association
- In this factory are organized meetings and are demonstrated the technologies introduced from the project.
- Main market are the national market, restaurants, food enterprises etc.
- The company for many years is exporting some limited amount of olive oil abroad in EU countries and Switzerland (3-5 tons per year).
- The company trades its products as organic (it is certified by a Swiss company)
- The Olive pomace used in one season depends on the production of olive trees. It was around 12.5 tons in the year 2020 (500 bags x 25 kilogram).
- Because the company used to produce very high olive oil quality, normal production from 1 ton olive fruits produced 140 litters of olive oil.
- The company has received support from the banks (credits)
- Ms. Shkalla was very happy about the UNIDO project support because it introduced a completely different way in doing business where every kind of the biomass from the olives can be used in factory, contributing in this way in the reduction of financial costs.
- The energy produced from pomace was used for boiling the water and used only in factory.
- The owner of factory was very happy not only because the financial support but mostly because the new way of using the pomace as energy source bringing in this way to an environmentally friendly activity.
- Practically, no waste is coming out from the business activity in this factory.
- The business needs more support in marketing for the olive oil products and diversifying the products. This needs to be improved in the future.

Name of the beneficiary: Romina Deda

Address: Shkoder, Vau i Dejes, Lagjia shkolles, rruga kryesore, ndertese me numer pasurie 147/15/2, zona kadastrale 2763, Albania

Contact: +355 694069284

Main findings:

This factory is located in North-West of the country.

During the site visit, we had the possibility to visit and see the olive oil factory and the business related to the support of UNIDO project.

- The project contributes with an olive pomace boiler (value reimbursed 4,155.00 EUR).
- The olive oil factory "Gjon Deda" is very well known in Shkoder and northern part of the country.
- The owner (Romina Deda) is member of the Olive Oil Association in Albania.
- Main market is the national market (northern part of Albania and Tirana), restaurants, food enterprises etc.
- The Olive pomace is used for boiler as well for heating the building (olive oil factory and the bar/restaurant in the same building. Other dried pomace is offered as biomass in some bakeries, and rest of it is used as a fertilizer in olive tree plantations.
- Ms. Deda was very happy about the UNIDO project support because it introduced a completely different way in doing business where every kind of the biomass from olives can be used in factory, contributing in this way in the reduction of financial costs.
- The owner of the factory was very happy not only because of the financial support but mostly because of the new way of using the pomace as energy source bringing in this way to an environmentally friendly activity.
- Practically, no waste is coming out from the business activity in this factory.
- One of the requests from the owner of the factory was to support in purchasing a drier for the pomace since it needs a lot of time to be dried naturally.
- The business needs more support in marketing for the olive oil products. This needs to be improved in the future.

Name of the beneficiary:	**Vladimir Pasmaciu**
Address:	Fabrika "Tre Miqte", Ndroq, Tirane, Albania
Contact:	+355 682073144

Main findings:

This factory is located in Tirana.

During the site visit, we had the possibility to visit and see the olive oil factory and the business related to the support of UNIDO project.

- The project contributed with an olive pit extractor and olive pomace boiler (value reimbursed 45,155.00 EUR).
- The olive oil factory "Tre Miqte" is very well known in Tirana.
- The business is member of the Olive Oil Association in Albania.
- Main market is the national market and some few amount of it is exported.
- The Olive pomace is used for boiler as well for heating the building (olive oil factory and the bar/restaurant/house in the same building. Other dried pomace is offered as biomass in some bakeries and other businesses and rest of it is used as a fertilizer in olive tree plantations.
- The boiler has a capacity of 220 litres of water, and it is installed in 2019.
- The boiler is certified according to PED97/23 EC
- The amount of olive pomace is different year by year and it varies between 250-350 tons/year
- Ms. Pasmaciu was very happy about the UNIDO project support because it introduced a completely different way in doing business where every kind of the biomass from olive can be used in factory, contributing in this way in the reduction of financial costs.

- The owner of factory was very happy not only because of the financial support but mostly because the new way of using the pomace as energy source bringing in this way to an environmentally friendly activity.
- Practically, no waste is coming out from the business activity in this factory
- One of the requests from the owner of factory was to support in buying a drier of the pomace since it needs a lot of time to be dried naturally.
- The business needs more support in marketing for the olive oil products. This needs to be improved in the future.

Name of the beneficiary:	**AFT SHA**
Address:	Official address (headquarter): Rruga Ismail Qemali, pall 18/14, Tirana, Albania The business: Lushnje, Albania
Contact:	+355 697935578

Main findings:

During the site visit, we had the possibility to visit and see the business related to the support of UNIDO project.

- The project contributed with a large boiler and a belt-drier technology (value reimbursed 46,500.00 US$ and 64,807 EUR respectively).
- The company "AFT SHA" is very well known in Albania as it is the only one of its kind in the market.
- The company collects olive pomace from olive oil factories around Albania
- Last year the volume of biomass collected was about 9000 m3.
- The company collects and process olive pomace, dry it and sell it in national market as solid fuel.
- Main market is the national market (businesses, breweries, milk-factories, restaurants, bakeries etc.
- The owner was very happy about the UNIDO project support because it introduced a completely different way in doing business where every kind of the biomass from olive can be used in factory, contributing in this way in the reduction of financial costs.
- Before this UNIDO project, the company was using the olive pomace as bioenergy source for heating.
- Mr. Shemaj was very happy not only because of the financial support but mostly because the new way of using the pomace as energy source bringing in this way to an environmentally friendly activity.
- The company is using mostly olive oil pomace as energy source, but it is collecting as well some few amount of sawdust.
- It is the only business in Albania which has a large dryer, and which can dry the pomace since it needs a lot of time to be dried naturally.
- The business needs more support in marketing for the biomass products since it is new idea in Albania. This needs to be improved in the future.

Name of the beneficiary:	**Leonardi Arapi**
Address:	Llakatund, Vlore. Albania
Contact:	+355 693405747

Main findings:

This factory is located in the south-west of Albania.

During the site visit, we had the possibility to visit and see the olive oil factory and the business related to the support of UNIDO project.

- The project contributed with an olive oil decanter (value reimbursed 42,500.00 EUR).
- The olive oil factory “Leonardi Arapi” is very well known in Vlora.
- The owner (Leonardi Arapi) is member of the Olive Oil Association in Albania.
- Main market is the local market (in Vlora).
- The olive pomace is used for boiler as well for heating the building (olive oil factory and the house in the same building. Other dried pomace is offered as biomass in some bakeries and other businesses and the rest of it is used as a fertilizer in olive tree plantations.
- The factory is using even the olive leaves as biomass (in the future the company aims to use them as medicinal herbs and/or fertilizers for olive tree plantations).
- The capacity of the factory can process up to 20 tons per day.
- The amount of olive pomace is different year by year and it varies between 100-250 tons/year.
- Mr. Arapi was very happy about the UNIDO project support because it introduced a completely different way in doing business where every kind of the biomass from olive can be used in factory, contributing in this way in the reduction of financial costs.
- Practically, no any waste is coming out from the business activity in this factory.
- One of the requests from the owner of the factory was to receive further support in purchasing a drier technology for the pomace since it needs a lot of time to be dried naturally.
- The business is very week in marketing the products, packaging and labelling and it needs more support in marketing for the olive oil products. This needs to be improved in the future.

4.4 Annex 4: Evaluation Consultant Code of Conduct Agreement Form

Evaluators/Consultants:

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

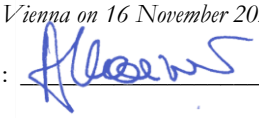
MTR Consultant Agreement Form

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

Name of Consultant: ANDREAS KARNER
Name of Consultancy Organization (where relevant): INDIVIDUAL CONSULTANT

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

Signed at *Vienna on 16 November 2021*

Signature : 

Name of Consultant: ABDULLAH DIKU
Name of Consultancy Organization (where relevant): INDIVIDUAL CONSULTANT

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

Signed at *Tirana, 16 November 2021*

Signature: