



Project Implementation Report

(1 July 2021 – 30 June 2022)

| | |
|--|--|
| Project Title: | <i>Sustainable use of biomass to assist the development of Turkey's economy towards green growth</i> |
| GEF ID: | 9218 |
| UNIDO ID: | 140325 |
| GEF Replenishment Cycle: | GEF-6 |
| Country(ies): | <i>Turkey, the Republic of</i> |
| Region: | <i>ECA - Europe and Central Asia</i> |
| GEF Focal Area: | <i>Climate Change Mitigation (CCM)</i> |
| Integrated Approach Pilot (IAP) Programs¹: | N/A |
| Stand-alone / Child Project: | <i>Stand alone</i> |
| Implementing Department/Division: | <i>ENE / ESI</i> |
| Co-Implementing Agency: | N/A |
| Executing Agency(ies): | <i>UNIDO, Ministry of Agriculture and Forestry MoAF/TAGEM)</i> |
| Project Type: | <i>Full-Sized Project (FSP)</i> |
| Project Duration: | 60 |
| Extension(s): | 1 |
| GEF Project Financing: | 4,416,210 USD |
| Agency Fee: | 419,540 USD |
| Co-financing Amount: | 29,598,880 USD |
| Date of CEO Endorsement/Approval: | 1/3/2018 |
| UNIDO Approval Date: | 1/25/2017 |
| Actual Implementation Start: | 3/6/2018 |
| Cumulative disbursement as of 30 June 2022: | 2,545,946.41 |
| Mid-term Review (MTR) Date: | 12/16/2021 |
| Original Project Completion Date: | 3/6/2023 |

¹ Only for GEF-6 projects, if applicable

| | |
|---|--------------|
| Project Completion Date as reported in FY21: | 3/6/2023 |
| Current SAP Completion Date: | 3/6/2023 |
| Expected Project Completion Date: | 6/30/2024 |
| Expected Terminal Evaluation (TE) Date: | 1/1/2024 |
| Expected Financial Closure Date: | 12/31/2024 |
| UNIDO Project Manager²: | Rana Ghoneim |

I. Brief description of project and status overview

| Project Objective | |
|--|--|
| <i>The project will trigger sectoral transformation through application of modern bio-energy technologies to improve overall energetic performance, increase competitiveness and reduce greenhouse gas emissions in agro-industry.</i> | |
| <i>Project core indicators</i> | <i>Expected at Endorsement / Approval Stage</i> |
| <i>CO₂ emission reduced (tons of CO_{2eq}) due to new bioenergy projects</i> | <i>4,280,000 metric tons (440,000 direct and 3,840,000 indirect)</i> |
| <i>Energy generated from bioenergy technologies supported or promoted by project (in MW_{th})</i> | <i>10 MW_{th}</i> |
| <i>No. of new bioenergy projects</i> | <i>5 bio-energy supply chains and 5 biomass energy technology applications</i> |

| Baseline |
|--|
| <p><i>Turkey's energy consumption is increasing every year, and the country imports 70% - 75% of its energy demand. To decrease its dependency on imported petroleum and natural gas, the country encourages electricity generation from renewable sources, which includes biomass, hydropower, wind-power, geothermal and solar. By end of the 2013, Turkey electric power installed capacity value was 64.008 MW. Turkey's total electricity installed capacity is expected to reach approximately 100,000 megawatts by the end of 2021, according to Turkey's Presidential Year Plan for 2021. The installed capacity of biomass-waste value is only 0, 37% of the total installed power. Agricultural waste forms the highest share (of 79%) of available biomass resources, with crop types like wheat, barley, tobacco, cotton, and rice. According to government studies, the theoretical potential for available agricultural waste (based on cultivated areas and remaining residues post-harvest) is at least 15 million tons per year, which is often burnt in open fields or are abandoned to decay. Detailed techno-economic potentials of bio-energy per region and agro-industrial subsector are currently lacking. The theoretical potentials are known per region and the project (and PPG) will refine these data, using the opportunity of this project to drive economic development in less industrialized regions.</i></p> <p><i>The project will build on the existing legal and regulatory framework in Turkey which has been presenting several policies and measures for the fight against climate change particularly in development plans and also national plans, programs and strategy documents, especially in energy, agriculture, forestry,</i></p> |

² Person responsible for report content

transportation, industry and waste sectors. Turkey's main goal in the fight against climate change is the mitigation of GHG emissions. According to 2012 figures of GHG emissions, the energy sector ranks first among sectors emitting greenhouse gases (at 70%). Turkey's strategy and policy is focused on providing energy security of supply through diversification in energy resources. An enhanced use of domestic and renewable energy resources is key to achieve this goal.

The project will strengthen the existing incentives, which the Government of Turkey has been preparing and implementing to accelerate the use of biomass resources with modern technology application.

| Overall Ratings ³ | FY22 | FY21 |
|--|------------------|------------------|
| Global Environmental Objectives (GEOs) / Development Objectives (DOs) Rating | Satisfactory (S) | Satisfactory (S) |
| <i>No change in the rating since the last implementation period.</i> | | |
| Implementation Progress (IP) Rating | Satisfactory (S) | Satisfactory (S) |
| <i>No change in the rating since the last implementation period.</i> | | |
| Overall Risk Rating | Low Risk (L) | Low Risk (L) |
| <i>No change in the rating since the last implementation period.</i> | | |

II. Targeted results and progress to-date

Please describe the progress made in achieving the outputs against key performance indicator's targets in the project's **M&E Plan/Log-Frame at the time of CEO Endorsement/Approval**. Please expand the table as needed.

Please fill in the below table or make a reference to any supporting documents that may be submitted as annexes to this report.

| Project Strategy | KPIs/Indicators | Baseline | Target level | Progress to-date |
|---|-----------------|----------|--------------|------------------|
| Component 1 – Demonstration of modern bio-energy technologies and energy efficiency measures in the agro-industrial sector | | | | |
| Outcome 1: Modern bio-energy technologies demonstrated and ready for scale-up | | | | |

³ Please refer to the explanatory note at the end of the document and assure that the indicated ratings correspond to the narrative of the report

| | | | | |
|--|--|-----|---|--|
| Output 1.1.1: Modern bio-energy technologies demonstrated and ready for scale-up | No. of project ideas submitted for supply chain development No. of farmers/project investors interested in developing supply chain projects | N/A | 30-50 applications expected by year 1. Out of these, 20 applications fitting to the criteria (incl. social and gender mainstreaming impact) most will be supported with business plan preparation by year 1. Participation from or by women in the project teams will be given extra points in the evaluation | <p>Development of guidelines and procedures for the call and evaluation of applications.</p> <p>Publishing of call and featuring the call using established online-tools by the regional development agencies.</p> <p>Support for awareness creation about the call (see component 3).</p> <p>Pre-evaluation of applications and selection of 20 applications for further support.</p> <p>12 business plans prepared for supply chain project.</p> <p>10 energy assessment reports are prepared for energy plants.</p> <p>6 energy plants and 5 supply chain projects are selected and feasibility reports are prepared for 11 companies for further investment. However, 1 energy company (Zeyn Biyogaz Elektrik Uretim ve Ticaret A.S) withdrew from the project.</p> <p>Verification visits for energy plants have been done by Verification Expert, Tagem and UNIDO experts, technical report has been completed.</p> <p>There are 20 Supply companies' business plans and 15 Energy companies' feasibility studies which are planned to be carried out within the scope of the project's first work package. A second nation-wide call for proposals launched and advertised between 01 June 2022 and 15 July 2022 to determine the companies that are entitled to technical support. The result of this evaluation was decided to be announced in August 2022 at the project's official web site: www.surdurulebilirbiyokutle.org</p> |
| Output 1.1.2: Modern bio-energy (and energy efficiency) technology applications in selected SME subsectors are prepared, with focus on process heat applications | No. of project ideas submitted for bio-energy project development No. of project investors interested in developing bio-energy projects | N/A | 100-150 applications expected by year 1. Out of these, 50 applications to be supported with TA (special assessment with focus on thermal energy demand – by Q2, year 2. Out of the 50, 25 applications to be selected for further support (preparation of detailed feasibility study) – by end year 2 | <p>The guidelines and procedures for the call and evaluation of applications are developed.</p> <p>The call is launched and promoted through online-tools by the regional development agencies.</p> <p>Support for awareness creation about the call</p> <p>Pre-evaluation of applications.</p> <p>10 energy assessment reports are prepared for energy plants.</p> <p>6 energy plants and 5 supply chain projects are selected and feasibility reports are prepared for 11 companies for further investment.</p> |
| Output 1.1.3: Linkage with existing financing instruments established for an accelerated scale-up | No. of projects qualifying against the call criteria and becoming eligible for TA support provided | N/A | 10 biomass supply chain projects to receive further technical, financial and | Financial expert and TAGEM served technical, financial and business development support for all applicant demonstration |

| | | | | |
|--|---|------------|---|--|
| <p>across agro-industrial subsectors</p> | | | <p>business development support (by Q2, year 3) 12 bio-energy technology projects to be made bankable (by Q2, year 3)</p> | <p>projects being 12 supply chain and 9 energy plant (14 different firms in total, as some have applied for both for supply chain and energy plant support). The financial expert has contacted the national and international financial banks, investment and leasing firms to discuss about the indicators for the bankability of bioenergy projects, received further information on the special deals for renewable energies and green investments. Prepared a general guideline for any bioenergy firm to benefit while applying for credits and loans for their investments; delivered tailored presentations and feedback to each demonstration applicant in separate meetings.</p> |
| <p>Output 1.1.4: Five sustainable bio-energy supply chains and five innovative and highly replicable technology applications with an estimated total capacity of 10 MWth are realized and monitored for economic and energetic performance</p> | <p>No. of projects qualifying against the call criteria and becoming eligible for TA support provided</p> | <p>N/A</p> | | <p>Verifications visits for energy plants have been done by the verification team consisting of independent technical expert, TAGEM experts and UNIDO experts, technical report is developed.</p> <p>The team verified the eligibility of some of the purchased machinery/equipment in pilot plants for GEF grant support.</p> <p>There is one company that has purchased its equipment, completed its installation in the company, completed the verification visit, and received the grant payment (Bolu Güç Birliği). Reimbursement Payment of \$707,188 was made to BGB for both energy plant and supply chain plant.</p> <p>Payment of \$189,318 was made to Mimsan.</p> <p>TEMS company is expected to buy the equipment in September 2022.</p> <p>Yapılcanlar company made its purchases. Received products are expected to be received and installed.</p> <p>The first payment of \$200,075 was made to TRE.</p> <p>Mey company is expected to inform about the latest status of the project.</p> <p>Dinar firm bought the products. He is expected to forward invoices, then a verification visit is scheduled.</p> <p>Zeyn company withdrew from the project.</p> <p>At the project meeting, it was decided not to pay Konfrut company for the boiler they bought.</p> |

| | | | | |
|--|---|--|---|---|
| | | | | <p>The first part of the grant payment to the Biyomek company was made (\$97,500). The remaining grant payment is pending.</p> <p>According to the monitoring plan, it is decided that the project will survey the plants that have been completed the implementation in every 3 months.</p> |
| Component 2 – Refined policy and regulatory framework to enable transformation across sub-sectors | | | | |
| Outcome 2: Policy and regulatory environment is fine-tuned to enable scale-up of bio-energy plants | | | | |
| Output 2.1.1: Sectoral policies, plans, programs, associate legislative and regulatory instruments are analysed and tailored recommendations for improvement are developed | Appropriate policy and regulatory framework for bio-energy development developed and enforced. Guidelines for sustainable crop management are developed OPTIONAL: Support mechanism for biomass supply chains put in place | Missing policy, guidelines for sustainable crop management (amount of residues to remain in fields) | Guidelines for sustainable crop management regulations and policies (amount of residues to remain in fields) Developing sustainable crop management guidelines materials (handbook, brochure) for farmers Support mechanism for development of biomass supply chains developed and adopted (by end year 5) by cooperating with MoFAL (higher support for the projects with higher social and gender mainstreaming impact) | About the use of bioenergy and legislation to 50 civil servants training was carried out. (2x2 days) (50% female participation) For the first package of activities on the development and improvement of the legislative infrastructure, studies and negotiations were conducted (in collaboration with Energy Law Research Institute) to carry out a legal gap analysis based on the international standards and to prepare the work to be done in partnership with the private sector, public, and university. The reports prepared by the policy experts are presented in the appendix |
| Output 2.1.2: Policies and programs to integrate heat from biomass | Guidelines, policy and regulatory framework for thermal utilization including district heating and cooling of biomass developed and adopted. | Policy and regulatory framework for the thermal component of bio-energy systems (including district heating and cooling) developed and adopted (by Q3 year 3) | Policy and regulatory framework for the thermal component of bio-energy systems (including district heating and cooling) developed and adopted (by Q3 year 3) | Output 2.1.2: Policies and programs to integrate heat from biomass and 2.1.3: Incentive programs and financing schemes for bioenergy promotion have already been completed by MENR before start of the project implementation. Thus, the project provide technical assistance to the Biotem project instead of Output 2.1.2 and 2.1.3 in collaboration with TEMSAN under MENR as endorsed by the PSC. |
| Output 2.1.3. Incentive programs and financing schemes for bio-energy promotion | Bioenergy financing mechanism developed | Financial mechanism (incl. social and gender sensitive grant support, financial guarantee or ESCO) to replicate biomass energy projects in the future explored and developed (by end year 5) | Financial mechanism (incl. social and gender sensitive grant support, financial guarantee or ESCO) to replicate biomass energy projects in the future explored and developed (by end year 5) | The Mini Biogas Unit Project, carried out by the Ministry of Energy and Natural Resources with the task assigned to Turkey Electromechanical Industry Inc. (TEMSAN), started in January 2019. The aim of the project is to develop a system that will enable people dealing with cattle farming in rural areas to produce biogas with the manure and use the produced biogas for cooking and hot water supply. For this purpose, TEMSAN has developed a Mini Biogas Unit with a volume of 1 m ³ , suitable for individual use that can be used by farmers having 1-3 cattle. It has been also planned to use the digestate as fertilizer which is an |

| | | | |
|--|--|--|---|
| | | | <p>end product after anaerobic digestion process.</p> <p>The Mini Biogas Unit is being tested by TEMSAN at General Directorate Campus. The effect of several parameters such as temperature, type of waste, amount of organic matter in the waste, etc. on biogas production is examined to tailor it to make it suitable for the operation of farmers; in addition to 14 pilot applications in Ankara and some villages. The cooperation with UNIDO initiated in December 2020 and two technical experts have been contracted by UNIDO in order to provide technical support to TEMSAN on the improvement of the biogas unit.</p> <p>A promotional video is developed for Mini Biogas Unit project and it is disseminated in social media (twitter, youtube) and MoENR and TEMSAN websites as well.</p> <p>The outcomes of Mini Biogas Unit Project could provide valuable know-how to the Ministry of Agriculture and Forestry as it serves to create a new resource (manure) for energy production, to reduce GHG emissions through production of biogas from manure and utilization of this biogas for basic needs.</p> <p>Furthermore, under this component Biomass Energy Potential Atlas (BEPA) https://bepa.enerji.gov.tr/ web portal which is being operated by MoENR will be improved. BEPA is a GIS application that shows the bioenergy potential in different regions of Turkey, to produce how much electricity and how much biofuel from which biomass source with graphic and numerical expressions on the map. Biomass energy potential analysis can be performed on both provincial and district bases.</p> <p>However, BEPA needs to be strengthened to be more dynamic in line with the latest technology advancements and capable of responding to future technologies and more investment focused such as;</p> <ul style="list-style-type: none"> - obtaining and calculating data through online current data web services up to parcel level - user interface with freely calculation tools - freely add new GIS tools to interface - shortest route analyses - calculations with area drawing - to be able to produce and download reports |
|--|--|--|---|

| | | | | |
|--|--|--|--|--|
| | | | | <ul style="list-style-type: none"> - strengthened with machine learning and artificial intelligence applications and features - image processing (it will also be used in product detection studies) - survey studies - the web portal needs to be user-friendly allowing potential investors to obtain data and produce easily, accurately and effectively - energy potential of each biomass (average value will be provided) - providing accurate energy potential (technical and economic) besides the theoretical energy potential (required energy related information will be provided) - see Box 1 below. <p>Additional data from Ministry of Agriculture will be feed into the BEPA to enhanced the real-life accuracy of the biomass energy potential data.⁴ The new dynamic portal will be operated jointly by MoENR and TAGEM/Ministry of Agriculture and Forestry (MoAF). In the improved version of BEPA, dynamic daily data will be used and it will ease to have more accurate and dynamic data for bioenergy potential in different regions of Turkey.</p> |
|--|--|--|--|--|

Component 3 – Capacity base strengthened and awareness raising increased

| | | | | |
|---|--|--|--|--|
| Output 3.1.1: Awareness on biomass technologies increased through the development of tailored knowledge products to facilitate technology transfer in the agro-industry | <p>Website hits and social media activities. Number of training programs developed and organized</p> <p>Number of trained people at academic level</p> <p>Number of master and PhD theses and academic papers</p> <p>Training course implemented</p> <p>Replication strategy developed</p> | <p>There are some technical universities and academic R&D institutions across the country, which focus on renewable energy technologies or agricultural resources research. However, specialized know-how for the development of specific business models on supply chain development and technical know-how on O&M, financing and implementation of bio-energy projects is lacking.</p> | <p>A project website developed and social media platforms integrated (e.g. Facebook, Twitter) – by Q2 year 1)</p> <p>Energy monitoring concept (by year 1) and analysis report developed (by year 5)</p> <p>Five master students (50% female) and 2 PhD (50% female) candidates accompanied in developing theses on bio-energy resources related topics (by end year 3)</p> <p>Publications of 5 papers (50% by female researchers) and participation in 5 relevant conferences and symposia on project related topics (by end year 4)</p> <p>Implementation of 1 training course (50% female participants) at academic level during at least 2 semesters (by end year 5)</p> <p>Developing of a replication strategy (by end year 5)</p> <p>Organizing 2 national</p> | <p>Project website and social media accounts are being used actively. Unique posts are being prepared, and at least 5 posts are shared weekly.</p> <p>Energy monitoring concept preparation is on progress. Formal letters have been sent to relevant universities prepared to choose 5 master students and 2 PhD candidates through co-financing from national stakeholders in the development of their theses about bio-energy potential from agricultural residues, supply chain development, heat integration into industrial processes, sustainable crop management, etc. Criteria is prepared for evaluations of the applications, applications are evaluated by 4 TAGEM experts, meetings were held to listen to the applicants and their projects in details. The 5 masters and 2 PhDs are selected for support, and their support is provided.</p> <p>"Bioenergy Studies" academic journal is created as the first bioenergy-related journal in Turkey.</p> |
|---|--|--|--|--|

⁴ Manual of BEPA : <https://bepa.enerji.gov.tr/KullanimKilavuzu.aspx>

| | | | | |
|---|--|--|---|---|
| | | | symposia (50% female participants) | Development of training curricula initiated for a 5 day training in cooperation with the PMU and international TA is in progress. The 4th symposium was successfully held on 26/27 May 2022. |
| Output 3.1.2: Capacity and knowledge of 50 decision makers in government and private sector are improved through 5 tailored workshops | Number of public and private sector stakeholders participating in trainings Number of trainings organized Number of specific awareness materials disseminated | At present there is less awareness, confidence and linkages among various stakeholders for bio-energy development and its benefits. There are no funding/legal commitments for bio-energy projects so far. | Information package (gender-sensitive) on bio-energy development and benefits for awareness creation and basic training developed (by Q2, year 1) 5 x 2 days of decision makers awareness workshops (40% female participants delivered across the country (by end year 1) | Development of information package initiated for awareness creation and basic training is partially finished, and the rest is in progress. 3 decision-makers trainings were held during 2020 through tailored workshops and the tailored course materials were published in the project website to public access. No further activity in 2021-2022. |
| Output 3.1.3. Capacity building mechanism for O&M, technical and service roles is established to develop and retain skilled workforce for innovative bio-energy technologies in industry through training of 20 trainers and 550 engineers, technicians, governmental and financial stakeholders, in cooperation with technical partners through 15 workshops | Number of trained engineers and technical staff Number of trained government staff to remove regulatory/implementation barriers Number of trained financial sector stakeholders and executive officers Number of farmers participating in roadshows | N/A | Training of 20 trainers (2x3 days) (40% female participants) An on-site training for trainers to gain knowledge and exposure to international best practice (3 days) (40% female participants) Training of 450 engineers, technical staff at SME/industries (9 workshops x 2 days) across the country on O&M and design/operational issues concerning bio-energy plants. (30% female participants) Training of 50 government staff (2x2 days) on bio-energy utilization and regulatory aspects/barrier removal. (50% female participants) Training for 50 financial sector stakeholders and executive officers from industry (2x2 days) on risk assessment and financial support (50% female participants) Active participation of over 50 farmers trade shows, targeting over 5000 farmers. (25% female participants) | Training of 20 trainers completed. 4 days of tailored and industry-supported trainings were delivered to 35 operation chiefs of bioenergy plants, consultants, and academics specialized in bioenergy. The packages were prepared in details, covering the international best practices, gender and environment sensible and updated country-specified presentations were delivered. On-site training was delivered virtually due to COVID-19 pandemic. %40 female participant ratio was successfully reached. Preparing the training program of 450 technical staff is in progress. The program was decided to be held in 9 different cities with 50 participants. The first was held in Konya 24-25 June 2022. |
| Component 4- Project Monitoring and Evaluation (M&E) | | | | |
| Output 4.1.1: A monitoring and evaluation plan will be prepared and carried out. | List of all progress reports prepared Mid-term and terminal evaluation conducted Number of project and steering committee meetings Number of dissemination materials | N/A | M&E Plan ready within 3 months of project start Mid-term evaluation completed by project mid-term | TAGEM has submitted execution Progress Report |

| | | | | |
|---|---|-----|--|---|
| | | | Terminal evaluation completed by end of project closing time Project terminal report completed by end of project Dissemination materials ready by the end of project | |
| Output 4.1.2.: Technical performance of demonstration projects will be monitored and publicized | Monitoring reports of successfully implemented projects Report on lessons learnt | N/A | 10 monitoring reports documenting successful project implementation of demonstrations Lessons learnt from the project drafted by Q2, year 5 | Mid-term Review report has been finalized by Lead Evaluation Expert and Evaluation Expert recruited by UNIDO. The MTR was completed on December 2021. |

III. Project Risk Management

1. Please indicate the overall project-level risks and the related risk management measures: (i) as identified in the CEO Endorsement document, and (ii) progress to-date. Please expand the table as needed.

Describe in tabular form the risks observed and priority mitigation activities undertaken during the reporting period in line with the project document. Note that risks, risk level and mitigations measures should be consistent with the ones identified in the CEO Endorsement/Approval document. Please also consider the project's ability to adopt the adaptive management approach in remediating any of the risks that had been sub-optimally rated (H, S) in the previous reporting cycle.

| | (i) Risks at CEO stage | (i) Risk level FY 21 | (i) Risk level FY 22 | (i) Mitigation measures | (ii) Progress to-date | New defined risk ⁵ |
|---|---|----------------------|----------------------|---|--|-------------------------------|
| 1 | Regulatory framework risk uncertainty in the application of legislation that incent renewable energy production | Moderate risk (M) | Moderate risk (M) | The incentive given for the energy to be obtained through biomass use is applied for ten years for those having production license subject to the Renewable Energy Law (REL) Support Mechanism that have commenced or will commence operation until 31/12/2015. However, in line with other developments, particularly the supply security, the amount, price and periods to be applied under this Law are determined by the Cabinet in a way to not exceed the prices in the Chart for production facilities with REL Certificate that will commence operation after 31/12/2015. | The mitigation measures situation is now as follows in the country: The incentive given for the energy to be obtained through biomass use is applied for ten years for those having production license subject to the Renewable Energy Law (REL) Support Mechanism that commenced until 31/12/2020. | <input type="checkbox"/> |
| 2 | No demonstrated projects in the country for bio-energy applications to produce | Moderate risk (M) | Moderate risk (M) | Biomass energy and supply chain technologies are state-of-the-art in many developing countries and | Still there is no demonstrated projects in the country for bio-energy applications to produce heating/cooling for industrial | <input type="checkbox"/> |

⁵ New risk added in reporting period. Check only if applicable.

| | | | | | | |
|---|---|-----------------|-----------------|--|---|--------------------------|
| | heating/cooling for industrial energy users | | | energy produced from agricultural residues in the form of electricity, heating and cooling is a major contribution to sustainable development and lowering the country's energy imports in the long term. Technology know-how and successful business models will be used while implementing the project. | energy users. However, in the pre evaluation of the energy plants submissions, two candidates applied for heating process which are grant process. | |
| 3 | Some bio-energy technologies and applications may not be technically/economically viable for energy generation. | Low risk (L) | Low risk (L) | The project focuses mainly on locally available resources and their use as a bio-energy fuel source within SME and industrial facilities. Assessments made during the PPG showed that the production of thermal energy would provide a major benefit for the predominantly fossil-fuel based industries, while additional income opportunities for local farmers utilizing their available residues would be generated. | The call for proposal guidelines indicates that the proposed projects must use locally available feedstock | <input type="checkbox"/> |
| 4 | Low awareness on biomass energy technologies may hinder the project development. | Low risk (L) | Low risk (L) | Building capacity and awareness raising among stakeholders on bio-energy technologies and their application has been already started during the PPG and will be further carried out as a special component (Component 3) during project implementation. | The risk is still valid. However, project team had chance to raise awareness among stakeholders on bio energy technologies in the awareness meetings that were held in 7 different cities in Turkey. The awareness raising studies will continue in the following years as well. | <input type="checkbox"/> |
| 5 | Entrepreneurs' lack of interest | Modest risk (M) | Modest risk (M) | Key stakeholders are currently not aware and do not have sufficient knowledge on the commercial use of biomass-to-energy. The competence of entrepreneurs as well as farmers and SME managers on bio-energy production and use will be enhanced by providing tailored awareness initiatives to strengthen the capacities. Entrepreneurs will be provided with technical assistance in the project development and assessing technical, economical feasibilities and develop bankable projects. | The competence of entrepreneurs as well as farmers and SME managers on bio-energy production and use has started to enhance by providing tailored awareness initiatives to strengthen the capacities by awareness raising meetings and one to one meetings. Entrepreneurs will be provided with technical assistance in the project development and assessing technical, economical feasibilities and develop bankable projects in the following years. | <input type="checkbox"/> |
| 6 | Technology providers' lack of interest | Low risk (L) | Low risk (L) | Considering the targeted actors in the supply chain and hence biomass producers, it is seen that the lack of technical information concerning technological biomass practices is one of the barriers to the starting of technological investments. This project seeks to facilitate | The risk is still valid. Due to the unstable economic conditions in Turkey, the targeted actors still have the lack of technical information concerning technological biomass practices is one of the barriers to the starting of technological investments. | <input type="checkbox"/> |

| | | | | | | |
|---|--|-----------------|--------------|--|--|--------------------------|
| | | | | and promote private sector participation and new technologies for bio-energy thermal utilization and thus create new economic opportunities for the agro-industry as well as local technology providers. Hence, their interest to participate within demonstration projects shall be ensured (e.g. via the already practiced premium grant in case local technologies are used). | | |
| 7 | Financial/credit constraints and high capital cost that prevent the private sector from investing in bio-energy projects | Low risk (L) | Low risk (L) | The project focuses on productive uses where bio-energy use (mainly heating/cooling, in addition to electricity production) can demonstrate real economic benefits and new value chains to encourage private sector participation. Selected business cases and demonstration projects will provide technical assistance to properly design, finance, and bio-energy applications that will contribute to increased confidence in the technical reliability of the technologies. Creation of a linkage with relevant financing schemes currently existing in the country will be ensured throughout the project by organizing financing roundtables with relevant stakeholders from the banking sector, private entrepreneurs and government. | The risk is still valid. However, a financial expert and TAGEM served technical, financial and business development support for all applicant demonstration projects being 12 supply chain and 9 energy plant (14 different firms in total, as some has applied for both for supply chain and energy plant support). The financial expert has contacted the national and international financial banks, investment and leasing firms to discuss about the indicators for the bankability of bioenergy projects, received further information on the special deals for renewable energies and green investments. Prepared a general guideline for any bioenergy firm to benefit while applying for credits and loans for their investments; delivered tailored presentations and feedback to each demonstration applicant in separate meetings. | <input type="checkbox"/> |
| 8 | Insufficiency of available financial mechanisms | Modest risk (M) | | It is very difficult for project sponsors to secure supply of biomass on long term basis with contracts, while this is a requirement for financing. The project will develop standard contracts to enable the setup of a market for biomass and promote to supply biomass to the local industry through matchmaking activities. UNIDO's best practice suggests that a limited triggering financing support (for instance as grant), combined with tailored technical assistance typically yields the best results. Loan Guarantee mechanism is going to be discussed under a dedicated Guarantee Facility as well as feasibility and advice to be developed under the project. | Project contacted with banks, possible local foundation sources and is now working to increase the available financial mechanisms. Moreover, under project a general guideline for any bioenergy firm to benefit while applying for credits and loans for their investments prepared; tailored presentations and feedback to each demonstration applicant in separate meetings delivered. | <input type="checkbox"/> |

| | | | | | | |
|----|---|-----------------|-----------------|--|--|--------------------------|
| 9 | The risk of raw material supply | Modest risk (M) | Modest risk (M) | Considering the large potential in existing biomass resources from agro-industrial waste streams, the partial use of these resources is not expected to have any impact on food production. Nevertheless, the biomass supply chain is so far in developing stage in the country and needs special focus and support mechanisms to enable farmers and agricultural companies to build up a local biomass fuel market. The project will promote the use of post-harvest agricultural wastes and byproducts and biomass residues generated in production processes in the agro-industry. | Project aimed to raise the awareness within the farmers about the large potential of existing biomass resources. In the pre evaluation phase of the potential projects, it is considered that there are potential projects for the use of post-harvest agricultural wastes and byproducts and biomass residues generated in production processes in agro-industry. | <input type="checkbox"/> |
| 10 | Competition between agricultural production and energy use | Low risk (L) | Low risk (L) | Sustainable use of modern biomass and development of a set of sustainability indicators and recommendations concerning the amount of residues that should be left on the fields will be developed as part of the project, with reference to the Global Bioenergy Partnership; relevant standards and certification schemes will be applied in line with best international practice where necessary. Agricultural products for human consumption or animal feed will not be included in the project to ensure food supply safety. The targeted biomass sources are agricultural residues which are not utilized for any consumption, such as harvest or pruning leftovers. | Within the project and calls for the energy plant and raw materials, sustainable use of modern biomass and development of a set of sustainability indicators and recommendations concerning the amount of residues that should be left on the fields is promoted. | <input type="checkbox"/> |
| 11 | There could be a risk of resistance against, or lack of interest in, the project activities from stakeholders, especially with regard to the active promotion of gender equality; or low participation rates of suitable female candidates due to lack of interest, inadequate project activity or missing qualified female population within engineering sector. | Low risk (L) | Low risk (L) | To mitigate this risk the project will pursue thorough and gender responsive communication and ensure stakeholder involvement at all levels, with special regard to involving women and men, as well as CSOs and NGOs promoting sustainable agriculture practices and energy use, and a gender expert. This shall mitigate social and gender related risks, promote gender equality, create a culture of mutual acceptance, and maximize the potential contribution of the project to improving | As foreseen, within the project, social and gender related risks are mitigated, gender equality, create a culture of mutual acceptance is promoted, and potential contribution of the project to improving gender equality in the energy field is maximized with the involvement of NGOs, women cooperatives, gender balanced partners, stakeholders. | |

| | | | | | |
|----|--|--------------|--------------|---|---|
| | | | | gender equality in the energy field. | |
| 12 | Climate change could affect Turkey's agricultural production | Low risk (L) | Low risk (L) | Increased drought periods (for instance in 2014) may affect the availability of biomass resources, both agriculture residues and livestock manure. During the project preparation phase, an assessment of the availability of resources based on different scenarios was carried out. As a result, it seems that the amount of untapped agricultural biomass potential available in the country is enormous and will not adversely affect the project implementation. | Since the amount of untapped agricultural biomass potential available in the country is enormous and currently will not be expected to affect the project implementation. |

2. If the project received a sub-optimal risk rating (H, S) in the previous reporting period, please state the actions taken since then to mitigate the relevant risks and improve the related risk rating. Please also elaborate on reasons that may have impeded any of the sub-optimal risk ratings from improving in the current reporting cycle; please indicate actions planned for the next reporting cycle to remediate this.

In the previous reporting period only low and medium level risks were reported and the level of the risks did not increase within this reporting period.

3. Please indicate any implication of the **COVID-19** pandemic on the progress of the project.

Covid-19 pandemic has caused enterprises of all sizes to cease business, at least temporarily, due to recommended or required workplace closures, or has reduced the level of business, with severe impacts on incomes and jobs. The economic impact of the crisis will cause these problems to linger on into the future.

A brief informal assessment has been conducted within the supply chain and energy plant project owners. They have been asked how they positioned, and their needs while and after pandemic. Only one of the 20 projects was withdrawn due to the pandemic. The other projects have responded as they have managed their business in the COVID-19 crisis. The progress on project activities especially on technology investments are expected to delay due to COVID-19's economic impact on the businesses.

Some meetings with enterprises are conducted online or hybrid to mitigate the risk of transmission.

4. Please clarify if the project is facing delays and is expected to request an **extension**.

Due to the COVID19 precautions, project management staff change for six times during the implementation and Turkey's economic situation (USD/TRY currency fluctuation) caused delays in the implementation. Regarding these causes, the PSC, including the executing agency TAGEM, decided to extend the project until mid-2024.

Moreover, in the MTR recommendations it is mentioned as: "Even though capacity-building activities like training, work shops, support of academic research, etc, and energy-related regulatory studies have been completed as is planned the selection of the energy and supply chain plants was delayed due to the pandemic conditions. This also caused a delay in transferring allocated financial supports and consequently taking these plants into full operation. For that reason, the extension of the project will ensure to reach a reasonable conclusion on the impact and sustainability of the project by monitoring the performance and other influences of the installed plants."

5. Please provide the **main findings and recommendations of completed MTR**, and elaborate on any actions taken towards the recommendations included in the report.

MTR Recommendation 1. There appear to be areas of possible collaboration between MoAF/TAGEM and MENR particularly in preparation of BEPA by using more reliable and updated data on biomass potential by agricultural products and region. This information is essential in formulation and implementation of projects/plans related to use of biomass for different purposes. Both of the institutions are willing to work together on this issue and this project would be an opportunity to establish long-standing cooperation between them. Moreover, TAGEM should consider the development/design of a biomass database directly integrated into agricultural production by product estimations. (DONE under outcome 2.1.2 and 2.1.3)

MTR Recommendation 2. Even though capacity-building activities like training, workshops, support of academic research, etc, and energy-related regulatory studies have been completed as is planned the selection of the energy and supply chain plants was delayed due to the pandemic conditions. This also caused a delay in transferring allocated financial supports and consequently taking these plants into full operation. For that reason, the extension of the project will ensure to reach a reasonable conclusion on the impact and sustainability of the project by monitoring the performance and other influences of the installed plants.

MTR Recommendation 3. The mid-term evaluation has been conducted on a slightly tight time schedule which has limited the iterative learning and data collection. The final evaluation of the project should consider the time requirement of the data collection and analysis, so that primary and secondary data can be collected, allowing for data collection and analysis to be more iterative and explorative.

IV. Environmental and Social Safeguards (ESS)

1. As part of the requirements for **projects from GEF-6 onwards**, and based on the screening as per the UNIDO Environmental and Social Safeguards Policies and Procedures (ESSPP), which category is the project?

- Category A project
- Category B project
- Category C project

(By selecting Category C, I confirm that the E&S risks of the project have not escalated to Category A or B).

Notes on new risks:

- *If new risks have been identified during implementation due to changes in, i.e. project design or context, these should also be listed in (ii) below.*
- *If these new/additional risks are related to Operational Safeguards #2, 3, 5, 6, or 8, please consult with UNIDO GEF Coordination to discuss next steps.*
- *Please refer to the UNIDO [Environmental and Social Safeguards Policies and Procedures \(ESSPP\)](#) on how to report on E&S issues.*

Please expand the table as needed.

| | E&S risk | Mitigation measures undertaken during the reporting period | Monitoring methods and procedures used in the reporting period |
|---|----------------------------------|--|--|
| (i) Risks identified in ESMP at time of CEO Endorsement | Competition between agricultural | ToR on the activities is prepared for the Output 2.1.1 Sustainable crop management – Regulations | TAGEM integrate the mitigation measures in the relevant activities |

| | | | |
|---|---|--|--|
| | production and energy use | concerning the use of agricultural resources for bioenergy. Expert team established by TAGEM. | under Output 2.1.1 |
| | Involvement of additional agricultural activity | Sustainability is one of the key criteria for the selection of proposed projects | The project team applied sustainability as one of the selection criteria of the pilots |
| | Effluent leakages and solid wastes during operation | The demonstration applications have not been yet implemented. | n/a |
| | Air emissions from combustion process during operation | The demonstration applications have not been yet implemented. | n/a |
| | Environmental impacts to the surroundings during construction | The demonstration applications have not been yet implemented. | n/a |
| | Major industrial accidents | The demonstration applications have not been yet implemented. | n/a |
| (ii) New risks identified during project implementation (if not applicable, please insert 'NA' in each box) | | | |

V. Stakeholder Engagement

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes** regarding engagement of stakeholders in the project (based on the Stakeholder Engagement Plan or equivalent document submitted at CEO Endorsement/Approval).

3rd Steering committee meeting was held on 14 December with the participation of all stakeholders, UNIDO project staff and TAGEM colleagues. It was carried out online within the scope of COVID-19 Precautions.

TAGEM

Progress: The project is ongoing with close collaboration with the main national execution partner, TAGEM. The project team is conducting weekly meetings and has direct, efficient communication in place.

Challenges: The progress on project activities especially on technology investments are expected to delay due to COVID-19's economic impact on the businesses. Tagem management and project team has been changed in June 2022.

Outcome: TAGEM continues to be the main executing partner of the project.

TAGEM submitted the 9th and 10th progress reports during 1 July 2021 – 30 June 2022.

MoENR

Progress: The project team together with TEMSAN, MENR conducted several meetings to determine the work plan on policy activities.

Challenges: Output 2.1.2: Policies and programs to integrate heat from biomass and 2.1.3: Incentive programs and financing schemes for bioenergy promotion have already been completed by MENR before start of the project implementation. Thus, budget allocated for Output 2.1.2 and 2.1.3 were shifted to Mini Biogas project implemented by TEMSAN, MENR.

Outcome: The Mini Biogas Unit Project, carried out by the Ministry of Energy and Natural Resources with the task assigned to Turkey Electromechanical Industry Inc. (TEMSAN), started in January 2019. The aim of the project is to develop a system that will enable people dealing with cattle farming in rural areas to produce biogas with the manure and use the produced biogas for cooking and hot water supply. For this purpose, TEMSAN has developed a Mini Biogas Unit with a volume of 1 m³, suitable for individual use that can be used by farmers having 1-3 cattle. It has been also planned to use the digestate as fertilizer which is an end product after anaerobic digestion process.

The Mini Biogas Unit is being tested by TEMSAN at General Directorate Campus. The effect of parameters such as temperature, type of waste, amount of organic matter in the waste, etc. on biogas production is examined; in addition to 14 pilot applications in Ankara and some villages. The cooperation with UNIDO initiated in December 2020 and two technical experts have been contracted by UNIDO in order to provide technical support to TEMSAN on the improvement of the biogas unit.

The outcomes of Mini Biogas Unit Project could provide valuable know-how to the Ministry of Agriculture and Forestry as it serves to create a new resource (manure) for energy production, to reduce GHG emissions through production of biogas from manure and utilization of this biogas for basic needs.

Furthermore, under the project Biomass Energy Potential Atlas (BEPA) <https://bepa.enerji.gov.tr/> web portal which is being operated by MoENR will be improved. BEPA is a GIS application that shows the bioenergy potential in different regions of Turkey, to produce how much electricity and how much biofuel from which biomass source with graphic and numerical expressions on the map. Biomass energy potential analysis can be performed on both provincial and district bases.

However, BEPA needs to be strengthened to be more dynamic in line with the latest technology advancements and capable of responding to future technologies and more investment focused such as;

- obtaining and calculating data through online current data web services up to parcel level*
- user interface with freely calculation tools*
- freely add new GIS tools to interface*
- shortest route analyses*
- calculations with area drawing*
- to be able to produce and download reports*
- strengthened with machine learning and artificial intelligence applications and features*
- image processing (it will also be used in product detection studies)*
- survey studies*
- the web portal needs to be user-friendly allowing potential investors to obtain data and produce easily, accurately and effectively*
- energy potential of each biomass (average value will be provided)*
- providing accurate energy potential (technical and economic) besides the theoretical energy potential (required energy related information will be provided) -see Box I below.*

Additional data from Ministry of Agriculture will be feed into the BEPA to enhanced the real-life accuracy of the biomass energy potential data. The new dynamic portal will be operated jointly by MoENR and

TAGEM/Ministry of Agriculture and Forestry (MoAF). In the improved version of BEPA, dynamic daily data will be used and it will ease to have more accurate and dynamic data for bioenergy potential in different regions of Turkey.

Private sector engagement

Progress and Outcome: The project is in continuous engagement with the selected agro-industrial enterprises and provide technical support and guidance on the investment. Project team is in close cooperation between both supply chain and energy plant sector experts.

Verification of the machinery/equipment purchases by the project grant have begun.

Payment of \$707,188.35 was made to BGB for both energy plant and supply chain plant.

Payment of \$189,318.04 was made to Mimsan.

TEMS company stated that it will buy the equipment in September 2022.

Yapilcanlar company made its purchases. Received products are expected to be received and installed.

The first payment of \$200,075.41 was made to TRE.

Mey company is expected to inform about the latest status of the project.

Dinar firm bought the products. He is expected to forward invoices, then a verification visit is scheduled.

Zeyn company withdrew from the project.

At the project meeting, it was decided not to pay Konfrut company for the boiler they bought.

The first part of the grant payment to the Biyomek company was made. (\$97,500) The remaining grant payment is awaited from the firm.

Implementation of the energy plants is complete. As a result of the meetings held, a follow-up plan was made. It has been decided to make it every 3 months to the companies that have been given incentives.

There is a company that has purchased its equipment, completed its installation in the company, completed the verification visit, and received the grant payment. (Bolu Güç Birliği) It is planned to send the surveys necessary for the monitoring process to the company.

Challenges: Due to COVID-19 precautions, some of the planned site visits has been cancelled. These visits are being conducted online or re-planned.

2. Please provide any feedback submitted by national counterparts, GEF OFF, co-financiers, and other partners/stakeholders of the project (e.g. private sector, CSOs, NGOs, etc.).

General Directorate of Foreign Relations of the European Union of MoAF evaluated all the international funded projects under the Ministry and as a result Sustainable use of biomass to assist the development of Turkey's economy towards green growth project ranked with highest evolution points. Team received good feedback from General Directorate of Foreign Relations of the European Union.

MoENR and TEMSAN General Manager expressed the satisfaction on Mini Biogas project and the introductory video display in the country. MoENR and TEMSAN General Manager requested UNIDO's support to expand the project in Africa as well.

3. Please provide any **relevant stakeholder consultation** documents.

- *3rd Project Steering Committee minutes*
- *9th Progress Report*
- *10th Progress Report*

VI. Gender Mainstreaming

1. Using the previous reporting period as a basis, please report on the **progress achieved on implementing gender-responsive measures and using gender-sensitive indicators**, as documented at CEO Endorsement/Approval (in the project results framework, gender action plan or equivalent),.

Gender-issue has been considered and thus equality between men and women was ensured within the project team as much as possible. But at the project level, it was more male-oriented and all the project coordinators were men. During implementation of project activities gender equality has also been applied. For example, at least 50% of the trainers, moderators and participants were women at the trainings and symposiums held within the scope of the project. Moreover, in the evaluation process of the companies applying for financial support, gender-issue was specified as a selection criterion, and therefore, the companies adopted equality policies became advantageous and received high scores.

"Risk and Financing in Biomass" Workshops and The Biomass Energy Journey Workshops started with the presentation of the United Nations Industrial Development Organization (UNIDO) Ayşen Toksöz Ünalın, titled "Gender Equality in the Energy Sector." In her presentation, she talked about gender inequality in the social and energy sectors. Ayşen Toksöz Ünalın mentioned in her presentation that gender equality strengthens the industry and economy, and as a result, it reduces poverty and increases general welfare. Therefore, she stated that if women play the same role as men in the labor market, the global gross product could increase by more than 25% by 2025. Sustainable development goals were mentioned in the continuation of the presentation. In particular, gender equality, which is the 5th article, and the 9th Sustainable Development Goal, establishing industry, innovation, and infrastructures, supporting inclusive and sustainable industrialization, and strengthening innovation were mentioned. Some programs are proposed to attract women to the energy sector.

Within the scope of the project, workshops on bioenergy efficiency and how to remove the legislative restrictions in bioenergy was held for 50 public officials, and gender equality was emphasized in this workshop and around 50% of female participants participated in each workshop.

Furthermore, the Mini Biogas introductory video has been made via taking into the account of gender equality norms. For example, both women and men were animated in the video and the video is vocalized by a woman vocalist.

VII. Knowledge Management

1. Using the previous reporting period as a basis, please elaborate on any **knowledge management activities / products**, as documented at CEO Endorsement / Approval.

REFINED POLICY AND REGULATORY FRAMEWORK TO ENABLE TRANSFORMATION ACROSS SUB-SECTORS

For the first package of activities on the development and improvement of the legislative infrastructure, studies and negotiations were conducted to carry out a legal gap analysis at international standards and to prepare the work to be done in partnership with the private sector, public, and university. In this context, many organizations were interviewed. Some of these are the Bioenergy Association, Koç University, Bilkent University, Ege University, Ministry of Energy and Natural Resources, and Energy Law Research Institute. After the meetings, it was decided to work with the Energy Law Research Institute, as it was thought that its staff and research would be more beneficial to the project.

Many meetings were held with the Energy Law Research Institute. The training planned to be held at the meetings and the report with its output was discussed. The reports prepared by the experts are presented in the appendix. To share the prepared reports and share them with the relevant stakeholders, it was decided to hold a work shop in İzmir on 1-2 February 2022. Energy Law Research Institute Board Member Lawyer Dr. Zuhâl Bereket Baş stated that it would be beneficial to talk about the current situation in the bioenergy journey of the country and to make comparisons with some European countries during the work shop. The countries that he argues are suitable for this comparison are the Netherlands and Germany. In the continuation of the meeting, Project Assistant Ayfer Şahin mentioned that they will work together with other ministries. He stated that the report planned to be prepared would not create a potential problem since it would be a recommendation rather than a sanction.

In the meetings held, potential problems were discussed and solutions were sought. One of the potential problems is that the BEPA Atlas data, which should be used while writing the report, is the 2018 TUIK

data. The parties at the Energy Law Research Institute stated that their current data is important and mentioned that subjects such as livestock, agriculture or forest assets can change rapidly in the past three years. TAGEM parties stated that they would assist the Energy Law Research Institute in providing data.

Finally, at the meetings, it was discussed whether animal wastes should be included in the report. While demanding the inclusion of TAGEM parties, the Energy Law Research Institute stated that it should not be included due to the lack of up-to-date data and because they thought that there would be difficulties in classification, and in addition to these, Energy Law Research declared there is not enough time include these data. Environmentalist Energy Association President Tolga Şallı stated that the variability in animal husbandry is frequent and since this issue may cause problems. However, he explained it can be included in the report even if it is small, and the parties accepted this view.

Within the scope of the project, a two-day workshop on bioenergy efficiency and how to remove the legislative restrictions in bioenergy was held for 50 public officials, and gender equality was emphasized in this workshop and 50% of female participants participated. The workshop participant list is attached to the report.

III. STEERING COMMITTEE MEETING

The 3rd Steering Committee Meeting started with the opening speeches and ended with the presentation of the project activities carried out, the activities to be carried out, the presentation of the suggestions, the making of the decisions, the question-answer, and the evaluation part. TAGEM General Manager and Project coordinator Dr. Nevzat BİRİŞİK, UNIDO Project Manager Rana GHONEIM, and UNIDO Turkey Representative Süleyman YILMAZ were given the floor respectively. After the opening speeches, a project briefing presentation was made by UNIDO expert Ayşen TOKSÖZ ÜNALAN. Detailed information was provided on the 4 components of the project: "supporting pilot plants", "biomass legislation guide studies", "capacity strengthening and awareness", "follow-up and evaluation". Afterward, the changes envisaged in the 3rd part of the meeting were shared with the board, their opinions and suggestions were presented and final decisions were made. Some of the decisions taken are to give preliminary information to the GEF regarding the update of the project completion date to 31 December 2023, to prepare additional feasibility studies, in case of an increase in the project support budget, deciding to select the companies with the best scores with a committee to be formed by TAGEM, UNIDO and independent experts are some of the decisions taken. In addition to these decisions, it was decided that the budget increase will be given to the companies selected by the board, and the verification visits will be completed in June after the equipment purchases of six biomass energy plants and five supply chain projects that are currently eligible for support. Finally, Assoc. Dr. İlhan AYDIN mentioned that our General Manager about biomass in Turkey also wants to create institutional capacity and stated that they observed that this capacity is formed at one point.

EUROPEAN UNION GENERAL DIRECTORATE OF FOREIGN RELATIONS PROJECT MONITORING MEETING

Before the project monitoring meeting of the General Directorate of Foreign Relations of the European Union, there were documents submitted to the monitoring team. These documents are the project application form, the project contract, the current activity plan, the current budget, the table showing how much expenditure has been made from which budget item by Annex-H of the budget expenditure made until the monitoring period, project reports, inception report, interim reports, progress reports, First Board of Directors meeting minutes, project meeting minutes, contractor information, and contract amendment documents. After the examination of these documents, a meeting was held with the monitoring team and the question-and-answer part about the documents or the project was started. As a result of the monitoring meeting, the General Directorate of Foreign Relations of the European Union stated that there are some findings and suggestions. The general determination is that the project can be sustained. Some of the suggestions stated that it would be appropriate to keep the changes in the project team to a minimum for the project to be carried out effectively, and that maximum care should be taken in minimizing the disruptions in the project schedule. Another suggestion is to prepare the project budget with the project activities and share it with the Project Monitoring Expert Pool personnel. It was recommended that the surplus budget from completed activities be used for a new activity to be defined in line with the purpose of the project or to increase the effectiveness of existing activities.

Many studies were carried out during this reporting period regarding the awareness activities of the project. These; "Circular Applications in the Agricultural Sector in the Green Consensus Process" Webinar 31-31 July 2021, "Smart Farming Technology" webinar held on 30 September 2021, "Bridge for Cities

2021" webinar held on 31 October 2021, 30 November 2021 "To Fossil Sourced Energies" Alternative Renewable Energy Sources" meeting is participation in AGROEXPO Izmir Agriculture Fair and academic achievements. In addition to these, the "4. Bioenergy Studies" symposium studies were started.

o "Circular Practices in the Agricultural Sector in the Green Reconciliation Process" Webinar

As part of the project awareness activities, the "Circular Practices in the Agricultural Sector in the Green Consensus Process" webinar was attended. The webinar was organized in cooperation with "Ministry of Agriculture and Forestry, General Directorate of Agricultural Research and Policies", "Cemre Movement Organization" and "Kibele Project".

Project Coordinator Nevzat BİRİŞİK attended the webinar held on 30-31 July 2021 with his opening speeches. In addition, one of our Project Coordinators Assoc. Dr. İlhan AYDIN participated as the chair of the session and Gülreyhan KARAKUŞ, Project National Expert, participated with the presentation of the project.

The relevant units of the Ministries, the private sector, important experts of the academy, and Non-Governmental Organizations showed great interest in the event. In the presentation made in the session titled "Compost and Bioenergy" of the webinar, the activities carried out within the scope of the project and the effects of the support were explained in detail.

o "Smart Farming Technology" Webinar

One of the aims of the project is to raise awareness about the project and build capacity. For this purpose, it is aimed to increase awareness in the society by carrying out activities, calls and trainings and using social media. One of the activities carried out is the "Smart Agricultural Technology" webinar we organized on September 30, 2021. The project was introduced to 140 participants who were interested in the subject in this webinar.

The opening speeches of this webinar, which is based on the subject of smart agriculture technologies, were made by the President of the Association of Near East and North African Agricultural Research Institutions (AARINENA), Dr. Adil Abdelrahim and General Manager of the General Directorate of Agricultural Research and Policies (TAGEM), Dr. Nevzat Birizik made it. TAGEM Deputy General Manager and Project Coordinator Assoc. Dr. İlhan Aydın made the introductory presentation of the project and talked about the aims of the project, its benefits, the activities of the project so far and the activities planned to be carried out within the scope of the project.

o "Alternative Renewable Energy Resources to Fossil Based Energies" meeting

Participation in the 2021 2nd Regional Group Meeting organized by the Eastern Mediterranean Agricultural Research Institute in order to contribute to the awareness of the project and the knowledge and skills of public personnel about biomass. The meeting, which was held under the agenda title of "Alternative Renewable Energy Sources to Fossil Sourced Energies", was held on 30.11.2021 via remote video conference.

Meeting Deputy Director Dr. İbrahim CERİT's opening speech and Institute Director Dr. It started with Abdullah ÇİL's presentation of the Institute. At the meeting, Project Assistant Ayfer ŞAHİN "Introducing the Project on Sustainable Biomass Use to Support the Development of the Turkish Economy on the Path to Green Growth", Project Specialist Mustafa ACAR from the Black Sea Agricultural Research Institute "Biofuels", Dr. Mehmet Emin BİLGİLİ "Solar Energy", from Eskişehir Gate Zone Agricultural Research Institute, Dr. Mahmut POLAT made a presentation on "Wind Energy".

TAGEM, BÜGEM, General Directorate of Agricultural Reform, Department of Geographical Information Systems, General Directorate of Food and Control, Department of Plant Health and Quarantine, Department of Food Businesses and Codex, Department of Education and Publication, Adana, Osmaniye, Mersin, Kahramanmaraş, Gaziantep Province Directorates of Agriculture and Forestry, Adana Biological Control Research Institute, Adıyaman Nuts Research Institute, Eastern Mediterranean Transition Zone Agricultural Research Institute, Eskişehir Transition Zone Agricultural Research Institute, Black Sea Agricultural Research Institute, Oilseeds Research Institute, Çukurova University Engineering Faculty Electrical and Electronics Department, Çukurova University Ceyhan Engineering Faculty Chemical Engineering Department, Alparslan Türkeş University Energy Systems Engineering Department, Alparslan Türkeş University Engineering Faculty Food Engineering Department, Tarsus University A wide participation was achieved with representatives from the Faculty of Engineering, Department of Mechanical Engineering, Mersin University, Faculty of Engineering, Department of Environmental Technology, Seyhan Chamber of Agriculture, Tarsus Commodity Exchange, Adana Metropolitan Municipality Agricultural Services

Department, Çukurova Development Agency, FBY Enerji Üretim A.Ş. At the meeting, the participants exchanged information by revealing their problems and solution suggestions.

o *Participation in AGROEXPO İzmir Agriculture Fair*

Within the scope of the project awareness activities and participation in farmer fairs, the company participated in the 17th AGROEXPO İzmir Agriculture Fair on February 02, 2022. Minister of Agriculture and Forestry Bekir PAKDEMİRLİ, Minister of Municipality and Agriculture of the State of Qatar Abdullah bin Abdulaziz bin Turki AL-SUBAIE, Governor of İzmir Yavuz Selim KÖŞGER, and Mayor of İzmir Metropolitan Municipality Tunç SOYER attended the opening ceremony. UNIDO Turkey Representative Süleyman YILMAZ, Project Coordinator İhsan ASLAN, Project Assistant Ayfer ŞAHİN, Project Specialist Mustafa ACAR and Project Technical Team İrem Aygün YAVUZ and Sinem ATAKER BAYRAK attended the event. Project activities were introduced at the stand opened to the participants of the AGROEXPO International Agriculture and Livestock Fair, which is shown as Turkey's largest fair in agriculture and animal husbandry. It was mentioned that agricultural residues gain economic value by creating a supply chain. In addition, the use of waste heat (direct heat, cogeneration, and heat-cooling to be obtained from trigeneration) generated during electrical energy, reducing the production costs of the food sector and district heating, increasing profit margins and paying attention to environmental awareness, creating systems that strengthen the green economy and provide sectoral integration. information has been conveyed.

o *The first issue of "BIOENERGY STUDIES" Magazine has been published online.*

Supported by the "Sustainable Biomass Use Project to Support the Development of the Turkish Economy on the Path to Green Growth" and within the body of the Black Sea Agricultural Research Institute; The first issue of the "BIOENERGY STUDIES" Magazine, which started its publication life on the TAGEM JOURNALS Platform, has been published online. Detailed information and access to published articles are available at www.bioenergystudies.org.

Bioenergy Studies" is an international refereed academic journal that is published biannually (July & December) by Black Sea Agricultural Research Institute. Bioenergy Studies is an online open-access journal free of charge which aims to address research and needs of studies within the area of bioenergy.

The journal publishes original research articles, critical review articles, short communications, and technical notes on applied and scientific research. Articles submitted to this journal must be in English and it shouldn't have been published previously. The full texts of research articles with only abstracts published as a part of a congress, symposium, meetings, etc., are welcomed.

Bioenergy Studies aims to address all studies related to bioenergy such as:

Sustainable Feedstock Resources for Bioenergy Production

- o *Feedstock Production*
- o *Agroforestry Residues*
- o *Bioenergy Crops etc*

Bioenergy Conversion Methods

- o *Physical Conversion*
- o *Chemical Conversion*
- o *Biological Conversion*
- o *Thermal Conversion etc.*

Bioenergy Conversion Products and Utilization

- o *Solid Biofuels*
- o *Oil-Based Biofuels*
- o *Bio-Alcohols*
- o *Biogas*
- o *Bio-Based Chemicals etc.*

Environmental and Economic Effects, Bioenergy Legislation

- o *Sustainability and Socio-Economic Impacts*
- o *Environmental Impacts*

- o *GHG Emissions*
- o *Investments and Financing*
- o *Bioenergy Legislation etc.*

RISK AND FINANCE WORKSHOP IN BIOMASS

Biomass risk assessment and 2x2 financial support training were given to 50 finance sector stakeholders and senior managers, planned within the scope of capacity building and awareness-raising in the third work package of the project, between 11-13 May. The training started on May 11, 2022, with the opening speech of Dr. Nevzat BİRİŞİK, General Manager of Agricultural Research and Policies.

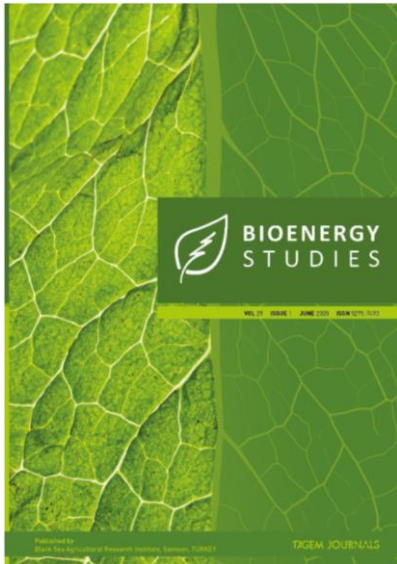
2. Please list any relevant knowledge management mechanisms/ tools that the project has generated.

Project Website: www.surdurulebilirbiyokutle.org

An academic journal on Bioenergy Studies Journal (<http://www.bioenergystudies.org/>)is created within the project activities. After the project finishes, TAGEM will manage the journal activities.

“Bioenergy Studies” is an international refereed academic journal that is published biannually (July & December) by Black Sea Agricultural Research Institute. Bioenergy Studies is an online open-access journal free of charge which aims to address research and needs of studies within the area of bioenergy.

The journal publishes original research articles, critical review articles, short communications, and technical notes on applied and scientific research. Articles submitted to this journal must be in English and it shouldn't have been published previously. The full texts of research articles with only abstracts published as a part of a congress, symposium, meetings, etc., are welcomed.



Biotem (Mini-biogas) project promotional video (in Turkish): https://youtu.be/R9iL_-4Tpc0

The video is being prepared in English.

Zekeriya köyü, Göllyaka'daki Mini Biogaz Ünitesi, yeni adıyla Biotem!

...daha fazla gör



134

1 yorum • 2 paylaşım



Beğen



Yorum Yap



Paylaş



Gönder



7.735 gösterim

Görüntüle

Snapshot of promotional post of Biotem project supported by the project that has reached more than 7500 views.

VIII. Implementation progress

1. Using the previous reporting period as a basis, please provide information on **progress, challenges and outcomes achieved/observed** with regards to project implementation.

Progress: Significant progress made on project activities especially under the technology demonstration component;

Continuous guidance is being provided to industry on bioenergy investments.

Financial expert and TAGEM served technical, financial and business development support for all applicant demonstration projects being 12 supply chain and 9 energy plant (14 different firms in total, as some has applied for both for supply chain and energy plant support). Prepared a general guideline for any bioenergy firm to benefit while applying for credits and loans for their investments; delivered tailored presentations and feedback to each demonstration applicant in separate meetings.

Verification of the machinery/equipment purchases by the project grant have begun.

The Mini Biogas Unit is being tested by TEMSAN at General Directorate Campus. The effect of parameters such as temperature, type of waste, amount of organic matter in the waste, etc. on biogas production is examined; in addition to 14 pilot applications in Ankara and some villages. The cooperation with UNIDO initiated and two technical experts have been contracted by UNIDO in order to provide technical support to TEMSAN on the improvement of the biogas unit. Introductory video is made for Mini Biogas Unit project and it is displayed in social media and MoENR and TEMSAN websites as well.

The outcomes of Mini Biogas Unit Project could provide valuable know-how to the Ministry of Agriculture and Forestry as it serves to create a new resource (manure) for energy production, to reduce GHG emissions through production of biogas from manure and utilization of this biogas for basic needs.

Biomass Energy Potential Atlas (BEPA) <https://bepa.enerji.gov.tr/> web portal which is being operated by MoENR will be improved.

"Bioenergy Studies" academic journal is created as the first bioenergy-related journal in Turkey. The first

record published .

The second of the symposium is held in 26/27 May 2022.

Mid-term Review report has been finalized by Lead Evaluation Expert and Evaluation Expert recruited by UNIDO.

Second call was held for further technical assistance as energy assessment study for energy plants and supply chain plants.

Site visits for feasibility studies on biomass supply chains and energy plants are conducted.

Awareness raising activities continued to be conducted through project website, project social media, online meetings and dissemination material.

Challenges: COVID-19 challenges on data collection from enterprises due to restricted site-visits. Capacity building work shops and training are postponed due to the pandemic.

Outcomes:

- 5 energy plants and 5 supply chain projects are selected and feasibility reports are prepared for 11 companies for further investment. 3 energy plant, 2 supply chain firms investments are concluded and others are in progress and their investments will be completed in 2022.
- Awareness on biomass technologies increased through the development of tailored knowledge products to facilitate technology transfer in the agro-industry

Please kindly find the following Progress Reports from TAGEM and annexes further detailed information in the attachment.

Progress Report 9 and annexes

Progress Report 10 and annexes

2. Please briefly elaborate on any **minor amendments**⁶ to the approved project that may have been introduced during the implementation period or indicate as not applicable (NA).

Please tick each category for which a change has occurred and provide a description of the change in the related textbox. You may attach supporting documentation, as appropriate.

| | | |
|-------------------------------------|---|--|
| <input checked="" type="checkbox"/> | Results Framework | Minor amendment. Output 2.1.2: Policies and programs to integrate heat from biomass and 2.1.3: Incentive programs and financing schemes for bioenergy promotion have already been completed by MENR before start of the project implementation. Thus, the project provide technical assistance to the Biotem (mini-biogas) project instead of Output 2.1.2 and 2.1.3 in collaboration with TEMSAN under MENR as endorsed by the PSC. |
| <input type="checkbox"/> | Components and Cost | NA |
| <input checked="" type="checkbox"/> | Institutional and Implementation Arrangements | Minor amendment. According to the initial project design Output 2.1.2 and 2.1.3 are planned to be fully executed by MENR. However MENR requested to execute these 2 Output by UNIDO. |

⁶ As described in Annex 9 of the GEF Project and Program Cycle Policy Guidelines, **minor amendments** are changes to the project design or implementation that do not have significant impact on the project objectives or scope, or an increase of the GEF project financing up to 5%.

| | | |
|--------------------------|--|----|
| <input type="checkbox"/> | Financial Management | NA |
| <input type="checkbox"/> | Implementation Schedule | NA |
| <input type="checkbox"/> | Executing Entity | NA |
| <input type="checkbox"/> | Executing Entity Category | NA |
| <input type="checkbox"/> | Minor Project Objective Change | NA |
| <input type="checkbox"/> | Safeguards | NA |
| <input type="checkbox"/> | Risk Analysis | NA |
| <input type="checkbox"/> | Increase of GEF Project Financing Up to 5% | NA |
| <input type="checkbox"/> | Co-Financing | NA |
| <input type="checkbox"/> | Location of Project Activities | NA |
| <input type="checkbox"/> | Others | NA |

3. Please provide progress related to the **financial implementation** of the project.

The total cost of the project is 34,015,090 USD which includes the GEF project grant and total co-financing from the implementing partners of the project at CEO endorsement. In this project TAGEM, MENR, Private Sector were identified as the implementing partners at CEO endorsement and both institutions had provided funds in kind and cash to the project throughout the implementation. According to CEO Endorsement total co-financing to be provided by these institutions were 29,598,880 USD which corresponds to 6,7 co-financing ratios.

The materialized co-financing up to date was estimated as 9,738,217 USD, this means that 1/3rd (32,7%) of the total co-financing at CEO endorsement has already been realized before the mid-term review period. The details of co-financing are presented in the Table 6.

Table GEF Project Endorsement/Approval and Estimations

| Institution | Co-Finance; In-kind | Co-finance; Cash | Total co-financing | Materialized co-financing |
|----------------|------------------------|---------------------|-----------------------|--|
| MoAF/TAGEM | 14 106 280 | 5 255 045 | 19 361 325 | 9 680 662 |
| MENR | 19,185 | 38,370 | 57 555 | 57 555 |
| Private Sector | - | 10 000 000 | 10 000 000 | To be calculated when the pilots are completed |
| UNIDO | 90 000 | 90 000 | 180 000 | - |
| Total | 14 286 280 | 15 312 600 | 29 598 880 | 9 738 217 |

The materialised co-financing covers the monetary equivalent of the facilities provided by the TAGEM, staff time, knowledge products, network and outreach for the project implementation as well as technical expertise, running of the project office etc., and the Biotem project expenditures of the MENR. Because of the COVID-19, transfer of the financial supports was delayed as soon as the field visits of the plants to be supported are completed the amount of co-finance materialized will increase.

The project has total funding of 4,416,210 USD, from the GEF Trust Fund. Until now 1,600,451 USD were spent on the activities completed, which corresponds to around 37% of the total budget.

IX. Work Plan and Budget

1. Please provide **an updated project work plan and budget** for the remaining duration of the project, as per last approved project extension. Please expand/modify the table as needed.

Please fill in the below table or make a reference to a file, in case it is submitted as an annex to the report.

| Outputs by Project Component | Year 1 | | | | Year 2 | | | | Year 3 | | | | GEF Grant Budget Available (US\$) |
|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-----------------------------------|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | |
| Component 1 – Demonstration of modern bio-energy technologies and energy efficiency measures in the agro-industrial sector | | | | | | | | | | | | | |
| Outcome 1: Modern bio-energy technologies demonstrated and ready for scale-up | | | | | | | | | | | | | |
| Output 1.1: Twenty business plans for sustainable supply chain management of agricultural residues prepared based on a call for applications and supported pre-assessment | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Output 1.2: Twenty-five feasibility studies for modern bio-energy technology applications with focus on process heat applications are prepared based on a call for projects and supported pre-assessment | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Output 1.3: Ten supply chain and twelve bio-energy technology projects made bankable and linked with existing financing instruments for an accelerated scale-up across agro-industrial subsectors | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Output 1.4: Five sustainable bio-energy supply chains and five innovative and highly replicable technology applications with an estimated total capacity of 10 MWth are realized and | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |

| | | | | | | | | | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| monitored for economic and energetic performance | | | | | | | | | | | | |
| Component 2 – Refined policy and regulatory framework to enable transformation across sub-sectors | | | | | | | | | | | | |
| Outcome 2: Policy and regulatory environment is fine-tuned to enable scale-up of bio-energy plants | | | | | | | | | | | | |
| Output 2.1: Sustainable crop management – Regulations concerning the use of agricultural resources | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Output 2.2: Policies and programs to integrate heat from biomass | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Output 2.3: Incentive programs and financing schemes for bio-energy promotion | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Component 3 – Capacity base strengthened and awareness raising increased | | | | | | | | | | | | |
| Outcome 3: Capacities of key players strengthened and information made available to market enablers and major stakeholders | | | | | | | | | | | | |
| Output 3.1: Awareness on biomass technologies increased through development of tailored knowledge products to facilitate technology transfer in the agro-industry | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Output 3.2: Capacity and knowledge of 50 decision makers in government and private sector are improved through 5 tailored workshops | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Output 3.3: Capacity building mechanism for O&M, technical and service roles is established to develop and retain skilled workforce for innovative bio-energy technologies in industry through training of 20 trainers and 550 engineers, technicians, governmental and financial stakeholders, in cooperation with technical partners through 15 workshops | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Component 4 – Monitoring and evaluation | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--|
| Outcome 4: Project's progress towards objectives continuously monitored and evaluated | | | | | | | | | | | | | |
| Output 4.1: A monitoring and evaluation plan will be prepared and carried out. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Output 4.2: Technical performance of demonstration projects will be monitored and publicized | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |

X. Synergies

1. Synergies achieved:

Describe potential synergies arising out of UNIDO internal cooperation and/or cooperation with (external) bilateral and multilateral projects/programmes, if applicable.

*The project is linked with Industrial Decarbonization Accelerator.
(<https://www.industrialenergyaccelerator.org/>)*



UNIDO's Industrial Decarbonization Ac...

4.182 takipçi
5 ay • 🌐

There's more to these sunflowers than meets the eye.
Take a closer look!

Learn more about **UNIDO's** industrial bioenergy project, supported by the GEF, in cooperation with the Republic of Turkey's Ministry of Agriculture and Forestry here 🖱️
<https://bit.ly/3ouTUbZ>

#bionergy #cleanenergy #energytransition
#poweringindustry

Çeviriyi gör



Ana Sayfa Ağımlar Gönder Bildirimler İş İlanları

3. Stories to be shared (Optional)

Please provide a brief summary of any especially interesting and impactful project results that are worth sharing with a larger audience, and/or investing communications time in. Please include links to any stories/videos available online.

EXPLANATORY NOTE

1. **Timing & duration:** Each report covers a twelve-month period, i.e. 1 July 2021 – 30 June 2022.
2. **Responsibility:** The responsibility for preparing the report lies with the project manager in consultation with the Division Chief and Director.
3. **Evaluation:** For the report to be used effectively as a tool for annual self-evaluation, project counterparts need to be fully involved. The (main) counterpart can provide any additional information considered essential, including a simple rating of project progress.
4. **Results-based management:** The annual project/programme progress reports are required by the RBM programme component focal points to obtain information on outcomes observed.

| Global Environmental Objectives (GEOs) / Development Objectives (DOs) ratings | |
|---|---|
| Highly Satisfactory (HS) | Project is expected to achieve or exceed <u>all</u> its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as “good practice”. |
| Satisfactory (S) | Project is expected to <u>achieve most</u> of its <u>major</u> global environmental objectives, and yields satisfactory global environmental benefits, with only minor shortcomings. |
| Moderately Satisfactory (MS) | Project is expected to <u>achieve most</u> of its major <u>relevant</u> objectives but with either significant shortcomings or modes overall relevance. Project is expected not to achieve some of its major global environmental objectives or yield some of the expected global environmental benefits. |
| Moderately Unsatisfactory (MU) | Project is expected to achieve <u>some</u> of its major global environmental objectives with major shortcomings or is expected to <u>achieve only some</u> of its major global environmental objectives. |
| Unsatisfactory (U) | Project is expected <u>not</u> to achieve <u>most</u> of its major global environmental objectives or to yield any satisfactory global environmental benefits. |
| Highly Unsatisfactory (HU) | The project has failed to achieve, and is not expected to achieve, <u>any</u> of its major global environmental objectives with no worthwhile benefits. |

| Implementation Progress (IP) | |
|---------------------------------------|---|
| Highly Satisfactory (HS) | Implementation of <u>all</u> components is in substantial compliance with the original/formally revised implementation plan for the project. The project can be presented as “good practice”. |
| Satisfactory (S) | Implementation of <u>most</u> components is in substantial compliance with the original/formally revised plan except for only few that are subject to remedial action. |
| Moderately Satisfactory (MS) | Implementation of <u>some</u> components is in substantial compliance with the original/formally revised plan with some components requiring remedial action. |
| Moderately Unsatisfactory (MU) | Implementation of <u>some</u> components is <u>not</u> in substantial compliance with the original/formally revised plan with most components requiring remedial action. |
| Unsatisfactory (U) | Implementation of <u>most</u> components is <u>not</u> in substantial compliance with the original/formally revised plan. |
| Highly Unsatisfactory (HU) | Implementation of <u>none</u> of the components is in substantial compliance with the original/formally revised plan. |

| Risk ratings | |
|--|---|
| Risk ratings will assess the overall risk of factors internal or external to the project which may affect implementation or prospects for achieving project objectives. Risk of projects should be rated on the following scale: | |
| High Risk (H) | There is a probability of greater than 75% that assumptions may fail to hold or materialize, and/or the project may face high risks. |
| Substantial Risk (S) | There is a probability of between 51% and 75% that assumptions may fail to hold or materialize, and/or the project may face substantial risks. |
| Moderate Risk (M) | There is a probability of between 26% and 50% that assumptions may fail to hold or materialize, and/or the project may face only moderate risk. |
| Low Risk (L) | There is a probability of up to 25% that assumptions may fail to hold or materialize, and/or the project may face only low risks. |