
Project Title: Enabling the Implementation of Georgia's Forest Sector Reform (ECO.Georgia)

Project/Activity Number: 20.2275.4-001.00

Title of the assignment: Alternative fuel market assessment and supply chain development opportunities (C2A2)

1. Brief information on the project

Climate change impacts and the demand for fuelwood from the rural population put significant pressure on Georgia's forests: up to 90% of rural households (1.43 million people) rely on fuelwood for their energy needs. The problem is exacerbated by households using obsolete technologies, such as traditional stoves, with a lifetime of two years and an efficiency of 35% or less. Fuelwood demand exceeds sustainable harvesting levels, considering the country's reduced productivity of many forests because of extensive forest degradation. This forest degradation leads to a loss of carbon absorption capacity, which is projected to decrease by five times between 1990 and 2030.

To address this negative development, the project "Enabling the Implementation of Georgia's Forest Sector Reform - ECO.Georgia" supports the Government of Georgia's transformational forest sector reform agenda to put the entire nation's forests under the framework for sustainable forest management (SFM). It will do so by supporting the establishment of a nationwide SFM system (Component 1) and, in parallel, promoting market development for energy-efficient appliances and alternative fuels (Component 2) to address the primary driver of forest degradation. In addition, the project will safeguard the reform implementation by diversifying livelihood opportunities and strengthening local self-governance in forest adjoining rural communities (Component 3).

The project is funded by the Green Climate Fund (GCF), the German Federal Ministry for Economic Cooperation and Development (BMZ), and the Swiss Development Cooperation (SDC), with GIZ being the project's accredited entity. The German contribution is part of the more comprehensive German support in the priority area "Environmental policy, conservation and sustainable use of natural resources in the South Caucasus", which aims at the sustainable use of natural resources, biodiversity conservation and climate protection, particularly for the benefit of the rural population. Similarly, both the share of renewables in the energy composition and the energy efficiency levels will increase.

Especially rural households using firewood as their source of heating energy will benefit from improved air quality and reduced fuelwood demand through eased access to energy efficient stoves. Forest-related small and medium-sized enterprises and their employees will receive support to improve their business activities' economic efficiency and environmental sustainability. Additionally, staff members of relevant public institutions (National Forestry Agency (NFA), Department of Environmental Supervision (DES), Environmental Information and Education Centre (EIEC), Rural Development Agency (RDA), municipalities) will receive direct support through human capacity development measures and grant finance.

ECO.Georgia primarily contributes to achieving the sustainable development goal (SDG) 15 (Protect, restore and promote sustainable use of terrestrial ecosystems) of the 2030 Agenda of the UN, but also to achieving SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all), SDG 13 (Take urgent action to combat climate

change and its impacts), SDG 1 (End poverty in all its forms everywhere), and SDG 5 (Achieve gender equality and empower all women and girls).

The duration of ECO.Georgia is from April 2021 until June 2028.

2. Description of the Assignment

2.1. Context

The current fuelwood consumption exceeds the sustainable supply level several times. Over 80% of rural households currently use wood for energy purposes. It is, therefore, not only necessary to reduce fuelwood demand by consuming less, by heating less or using more efficient woodburning stoves, but also to explore alternatives.

Based on data from previous studies¹, Georgia possesses significant volumes of solid woody biomass residue that is not currently utilized and can be used for heating through the production of Upgraded Solid Biofuels (USB). USB production would considerably satisfy heating needs in the regions and reduce demand for fuelwood. Alternative fuels (AF), such as USB, can be produced from woody or agricultural residues and industrial and municipal sources by modern processes and technologies. AF production would diversify domestic heating fuel supplies, easing pressure on forestry resources and supporting the rural economy. Nevertheless, due to different challenges, AF production is not widely developed in the country.

A local market exists for the simplest forms of USB, wood chips and hazelnut shells in Georgia. However, the scale of this market is hard to assess due to its localized and largely informal nature, as well as high regional differences in the availability/supply of raw materials and demand. Entrepreneurs involved in the AF supply chain need more detailed information on raw materials' availability, territorial distribution, and expertise to conduct such resource assessments and develop feasible business models.

The assessment of information for the available biomass supply and potential for USB production in the three target regions of ECO.Georgia project needs to be updated. The latest available data and information are from the GCF Feasibility Study based on National Biomass Potential Assessment by World Experience for Georgia (WEG) 2014 and updated for ECO.Georgia project pilot municipalities in 2019 by Energy Efficiency Center Georgia (EECG).

In this context, ECO.Georgia project aims to create an Energy Efficient Alternative Fuel (EE-AF) market that will reach a critical share and self-sustaining level of growth. Notably, the volume of EE-AF production and sales is expected to increase manifold - 30,730 EE stoves and 28,600 tonnes of AF to be produced and realised by 2028.

To ensure that the project goal and milestones are achieved, conducting a technical and economic feasibility assessment (hereinafter feasibility assessment) of the AF market's

¹ Assessment of Wood and Agricultural Residue Biomass Energy Potential in Georgia: [final_report-weg_0.pdf](#), 2014

Municipal Energy Concepts in the municipalities of Dedoplistskaro and Akhmeta, GIZ/SMBP - Frank Helbig, 2018
Baseline data Collection-Energy Demand, Supply and Efficiency in Georgia, GIZ/ECOserve - Energy Efficiency Center of Georgia, 2019

Sustainable Bioenergy for Georgia: [A Roadmap](#), IEA, 2020

Sustainable Rural Energy solutions and Decisions – [Guidelines to New Possibilities](#), CENN, 2021

sustainable functioning, including the AF production and its real potential for selling, is essential. It is also necessary to assess the volume of the project goal - whether it is achievable or not - and, based on the actual assessment results, determine a new target capacity in case of a negative outcome.

2.2. Objective(s) of the assignment and work packages/tasks

The objective of the assignment is to assess the constraints and the possibilities of the alternative fuel market development in Georgia and the feasibility of the target – 28 600t of AF production annually (by 2028) on the market; and to propose recommendations to support market development based on the analysis.

The consultant shall fulfil the following tasks:

Work package (WP) 1: Assessment of the AF market focusing on the supply and realisation chain.

The study shall provide a comprehensive picture of the AF market development during the last five years (at least) and a comprehensive overview of the status quo that shall include identifying the market players, the capacities of AF production and the market itself, also the types and amount of AF being realised on the local market and exported. The study shall assess and analyse the barriers to the AF market's sustainable operation and development and propose a mechanism or approach that could be applied to support market development by the ECO.Georgia project, the Government of Georgia or other relevant actors.

During the research, the consultant shall identify all relevant present and former producers of AF materials and other stakeholders in the AF supply chain (as much as possible). In cooperation with the ECO.Georgia team, the consultant shall prepare the questionnaire to conduct interviews to indicate the obstacles/challenges and needs for sustainable market development according to the producers' experience. There may be the need to develop multiple versions of the questionnaire to adapt to different interviewees. The potential target group shall include but not be limited to the following:

- Currently operating producers of AF.
- AF producers financed by RDA.
- Producers that have previously shut down the production of AF.
- Exporters, if available.
- Organizations that conducted programs, projects, and studies for AF production.
- Etc.

The assessment shall also identify the consumers of AF (current and former), the scale of demand and the cost-effective capacity of resources for AF production and realisation.

The study shall identify the baseline for AF, i.e., the capacity of the current production of AF and an estimation of the amount of realised AF each year during the last five years. Current producers should be included in a database giving an overview of type of AF, raw material source, produced capacities, and main consumer groups (domestic and international).

The market analysis shall also include the creation of the most feasible scenario(s) for market development and how the ECO.Georgia project, the Government of Georgia or other relevant actors could support this development to achieve sustainable market development. Based on

the most beneficial cost-benefit scenario(s) from the identified feasible ones, push-and-pull recommendations for market development shall be developed through support by the ECO.Georgia project, the Government of Georgia or other relevant actors, including an estimation of the needed investment and timeframe for implementing each recommended mechanism/approach, as well as the benefits resulting from a cost-benefit analysis of each scenario.

WP 2: Assessment of the feasibility of the project AF target and the methodology to ensure the tracking of the target indicator.

As explained above, the project aims to ensure the volume of AF reaches 28,600 tonnes to be produced and realised by 2028.

The consultant, based on the AF market analysis, shall assess whether the targeted amount of AF is reachable by 2028; and, if not, develop scenarios what are the feasible amounts to be reached, taking into account raw material availability, market barriers, and the potential support mechanisms developed under WP 1 which may be introduced.

Also, the consultant shall provide a methodology for tracking the production and realisation rate to collect the data to assess the indicator.

WP3: High-level discussion.

In collaboration with the ECO.Georgia team, the consultant shall identify relevant decision-makers for AF policy direction; to plan and organise the workshop to present the market assessment findings to introduce the recommendations for market development developed under WP 1. AF producers shall also participate in the workshop.

Organisational and logistical issues related to the workshop shall be arranged in cooperation with ECO.Georgia team and logistical costs will be covered by GIZ.

2.3. Deliverables

Expected outputs are described in the table below:

Deliverables and deadlines	Deadline for WPs	Number of days per expert in total
<p>Deliverable 1 The questionnaire(s) for the survey agreed with ECO.Georgia and RDA. <i>deadline: 1 week after the contract is signed.</i></p>	<p>Within 3,5 months after the contract is signed</p>	<p>Up 60 to expert days</p>

<p>Deliverable 2 Databases of AF producers and consumers.</p> <p><i>The format is to be agreed upon with ECO.Georgia and RDA</i></p> <p><i>deadline: 8 weeks after the contract is signed.</i></p>		
<p>Deliverable 3 3.1 Cost-benefit analyses (CBA) of the most feasible scenarios for sustainable AF market operation 3.2 Interim report on the AF market survey findings.</p> <p><i>deadline: 10 weeks after the contract is signed</i></p>		
<p>Deliverable 4 Methodology of tracking and collecting the data for assessing AF indicators.</p> <p><i>deadline: 10 weeks after the contract is signed.</i></p>		
<p>Deliverables 5 List of measures to reach the target indicator of the project considering the CBA.</p> <p><i>deadline: 10 weeks after the contract is signed</i></p>		
<p>Deliverable 6 Discussion notes and the workshop's conclusion are to be included in the final report on market assessment results.</p> <p><i>deadline: 10 weeks after the contract is signed.</i></p>		
<p>Deliverable 7: The final report on the AF market assessment survey identifying constraints and supporting mechanism(s), and incentive(s) for overcoming the barriers to ensure market sustainability.</p> <p><i>deadline: 12 weeks after the contract is signed.</i></p>		
<p>Travel expenses</p>		<p>Number of days/nights per expert</p>
<ul style="list-style-type: none"> • Overnight allowance in country of assignment 		<p>Up to 12</p>
<ul style="list-style-type: none"> • Travel costs (train, private vehicle) 		<p>Up to 7</p>

3. Experts' profile

Expert 1:

Title of an Expert: Renewable energy/energy efficiency and/or Environmental specialist experienced in conducting surveys or market research.

Education: University Degree; Master's or higher degree in engineering science or in economics or environmental issues

General Professional experience: 10 years of experience in advisory services in renewable energy or energy efficiency.

Specific professional experience: 8 years of experience focusing on developing projects in biomass and other alternative fuel fields, including studies and pilot projects ensuring biomass utilisation, as well as conducting surveys and market research.

Experience in the region/knowledge of the country: knowledge in biomass and AF field in Georgia and the best international cases that could be applicable to Georgia.

Language skills: fluency in Georgian and English

Expert 2:

Title of an expert: Specialist experienced in conducting the cost-benefit analysis.

Education: University Degree; Master's or higher degree in economics or engineering science.

Professional experience: 8 years of experience in advisory services in renewable energy and energy efficiency.

Specific professional experience: 5 years of experience conducting a cost-benefit analysis focusing on developing projects in biomass and other alternative fuel fields, including studies and pilot projects ensuring biomass utilisation.

Experience in the region/knowledge of the country: relevant knowledge of the ToR-related field in Georgia.

Language skills: fluency in Georgian and English

4. Timing and duration

Between April and August (including administrative procedures) 2023, up to 60 working days in total.

5. Place of assignment

Georgia

6. Reporting

- Reports are to be prepared according to the GIZ template to be provided by the project.
- All documents shall be delivered electronically in Georgian and English
- The consultant shall report to ECO.Georgia.
- The consultant is expected to coordinate very closely with ECO.Georgia and the Rural Development Agency of Georgia

7. Other provisions

7.1 Budgeting and payment

Travel expenses shall be included in the financial proposal. The number of travel days shall not exceed fourteen days and twelve overnights per expert.

Payments can be made in two instalments. The contractor can issue an interim invoice upon submission of deliverables 1 and 2 for which maximum of 18 working days can be claimed.

Remainder of the payment will take place in one instalment as final payment upon completion and delivery of all other deliverables.

7.2 Flexible remuneration item

Budget for flexible remuneration: GEL 3.000

The fixed, unalterable budget given above is earmarked in the price schedule for flexible remuneration. Flexible remuneration is intended to facilitate the flexible management of the contract by the officer responsible for the commission at GIZ. The contractor can make use of the funds in accordance with section 3.1.3.2 of the General Terms and Conditions (GIZ Georgia).

7.3 Tender Procedure

The technical evaluation will take place in accordance with the assessment grid. As the grid indicated, the tenderer shall make a technical proposal. Technical proposal should consist of the following parts:

- interpretation of the ToR/assignment
- strategy for the implementation reflecting other alternatives
- Implementation method
- a work plan in a visual form and

Along with the technical proposal, tenderer shall provide CVs of proposed experts meeting the requirements listed in Art. 3.

Please calculate your price bid based exactly on the costing requirements.

The specifications for pricing are defined in the attached price schedule which is required to be used for the preparation of the financial offer.