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Genesis Biotech – Multi-site Biogas Initiative, Romania

Key Project Information

Project Description

Genesis Biotech SRL is a company dedicated to innovation and sustainability in biotechnology. For our certification project, we are proud to present the initiative of producing electricity and heat from renewable sources. This project demonstrates our commitment to using renewable resources while reducing carbon emissions.

The project aims to recover organic waste and produce electricity and heat, thus contributing to a cleaner and more sustainable environment. Genesis Biotech is committed to the highest standards of quality and efficiency, ensuring that every stage of the project is carried out to Gold Standard regulations.

The project is currently in the process of certifying its carbon credits to achieve Gold Standard international accreditation. It uses innovative methods to quantify, certify and maximise impacts on climate security and sustainable development. The criteria set by the international Gold Standard organisation are aligned with the UN Sustainable Development Goals.

What is the aim of Gold Standard certification?

The project is currently going through a Carbon Credit certification process to adhere to the international 'Gold Standard' accreditation, which utilizes innovative approaches to quantify, certify and maximize impacts towards climate security and sustainable development under Gold Standard for the Global Goals, and it is aligned with the United Nations Sustainable Development Goals.

Upon successfully finalizing its Gold Standard certification, Genesis Biotech SRL is aiming to receive carbon credits in an equal amount with the certified CO₂ emissions reductions achieved by the following projects activities localized in:

Plant 1, location Cordun, Neamt county: The total GHG emission reductions for the 15 years crediting period (2026-2040) are estimated at 698,105 tCO₂e, and the annual average GHG emission estimation for the first crediting period (2026-2030) is around 27,072 tCO₂e.

Plant 2, location Pischia, Timis county: The total GHG emission reductions for the 15 years crediting period (2026-2040) are estimated at 698,105 tCO₂e, and the annual average GHG emission estimation for the first crediting period (2026-2030) is around 27,072 tCO₂e.

Plant 3, location Almaj, Dolj county: The total GHG emission reductions for the 15 years crediting period (2026-2030) are estimated at 713,225 tCO₂e, and the annual average GHG emission estimation for the first crediting period (2026-2030) is around 28,080 tCO₂e.

Plant 4, location Gruiu, Calarasi county: The total GHG emission reductions for the 15 years crediting period (2026-2030) are estimated at 649,057 tCO₂e, and the annual average GHG emission estimation for the first crediting period (2026-2030) is around 19,754 tCO₂e.

Gold Standard Certification Timeline

The project passed the Gold Standard preliminary assessment in the fall of 2024 and is continuing the certification process, the Design Review and validation stage with an independent third-party auditor during 2024 and 2025, with the aim of receiving carbon credits starting in 2026. After this date, the project will receive CO₂ credits for a 5-year cycle (2026-2030), renewable 3 times (2026-2040), after passing the entire verification process.

Project Location

The project activity is located in three locations in Romania.
The address and the GPS coordinates for the plants are:

- **Plant 1**

Address : 19B, Uzina de Tevi, Cordun commune, Cordun village, Neamt county

GPS: 46.96807, 26.88398

- **Plant 2**

Address: Cadastral No. 407294, Pischia, Timis county

GPS: 45.885155, 21.360096

- **Plant 3**

Address: Cadastral No. 31765, Almaj, Sitoaia village, Dolj county

GPS: 44.416555, 23.716607

- **Plant 4**

Address: city Budesti, village Gruiu, nr. cad. 21364, 21369 and 23041

GPS: 44.24028, 26.40028

Project Timeline Implementation

Plant 1: The first tender for the project to procure major equipment took place in the summer of 2023, which is considered the project start date in accordance with Gold Standard rules and requirements. The facility was then fully commissioned in the fall of 2024, and commercial operation began in 2025.

Plant 2: The first tender for the procurement of major equipment began in late spring 2024. The facility is expected to be fully commissioned in early 2026, and commercial operations are scheduled to begin around the same time.

Plant 3: The first tender for the project to procure major equipment was held in early fall 2024. The facility is expected to be fully operational and begin commercial operations in early 2026.

Plant 4: The first tender for the project to procure major equipment was held in early 2026. The facility is expected to be fully commissioned in early summer 2027, and commercial operations are scheduled to begin in late winter 2027.

Baseline Scenario

For all project is applicable the same baseline scenario taking into account the technologies used in the projects.

As per the UN CDM methodology applied to assess emissions savings, for renewable energy technologies substituting the energy used from the national grid, the simplified baseline involves multiplying the quantity of the electric energy consumption of the technologies that would have been utilized in the absence of the project with an emission factor for electricity sourced from the grid and for the emissions the second was the quantity of the Methane emissions that would have been released in the atmosphere in the absence of the project from the fresh waste.

In our specific context, the baseline scenario for biogas and electricity production in the absence of the project activity is as follows:

- Electricity is sourced from the national grid.
- Methane (CH₄) emissions from fresh waste are released into the atmosphere from landfills.

Major Project Benefits

Our project aims to tackle two critical issues simultaneously: food waste and energy production. By partnering with supermarkets and other companies, we're implementing a sustainable solution to convert their fresh waste into valuable biogas through anaerobic digestion.

Key Components:

1. **Waste Collection System:** Establishing a streamlined process for collecting fresh waste from supermarkets and other relevant businesses. This includes

developing partnerships, setting up collection schedules, and ensuring compliance with health and safety regulations.

2. **Anaerobic Digestion Facility:** Construction of a facility equipped with anaerobic digesters. These digesters will break down the organic matter in the collected waste in an oxygen-free environment, producing biogas and digestate.
3. **Biogas treatment:** Implementing treatment systems for the biogas produced to meet the appropriate quality standards for various applications. This may involve removing impurities such as hydrogen sulfide.
4. **Energy production and use:** The use of biogas as a renewable energy source for the production of green electricity and thermal energy. Electricity can be fed into the grid or used on-site to power installed equipment, thereby reducing greenhouse gas emissions. Thermal energy is primarily used on-site for the biogas plant's operational processes, and any surplus can be sold to a third party.
5. **Digestate management:** The management of the digestate produced by the anaerobic digestion process. It is used as a fertilizer, rich in nutrients, for agricultural purposes, or can be converted into other value-added products, thereby closing the waste-to-energy cycle.

Benefits:

1. **Environmental Impact:** Reducing greenhouse gas emissions by diverting organic waste from landfills, where it would otherwise decompose and release methane, a potent greenhouse gas. Additionally, generating renewable energy displaces the need for fossil fuels, further mitigating environmental harm.
2. **Economic opportunities:** Job creation in the waste collection and processing sector and in the energy production sector. In addition, by recovering waste through biogas production, waste-generating companies can reduce their waste disposal costs.
3. **Social Responsibility:** Demonstrating a commitment to sustainability and corporate social responsibility by actively addressing food waste and contributing to renewable energy production. This can enhance company reputation and foster positive relationships with customers and communities.
4. **Energy Security:** Diversifying energy sources by integrating renewable biogas into the energy mix, reducing dependency on finite fossil fuels and volatile energy markets.
5. **Circular Economy:** Promoting a circular economy model by converting waste into valuable resources, closing the loop on the waste stream and creating a more sustainable and resilient ecosystem.

Overall, our project not only offers an innovative solution to the pressing issues of food waste and energy production but also embodies the principles of sustainability, resource efficiency, and environmental stewardship.

Therefore, the project contributes to the following United Nations Sustainable Development Goals:

1. **SDG 4: Quality Education** - The project can indirectly contribute to Goal 4 by raising awareness and promoting education on sustainable waste management practices, renewable energy technologies, and agricultural sustainability within the community.
2. **SDG 5: Gender Equality** - The project will ensure equal opportunities for both men and women in employment, decision-making processes, and benefit sharing.
3. **SDG 7: Affordable and Clean Energy** - The project promotes the use of biogas as a renewable energy source, aligning with the goal of ensuring access to affordable, reliable, sustainable, and modern energy for all.
4. **SDG 8: Decent Work and Economic Growth** - The creation of new jobs in waste collection, processing, and green energy generation sectors contributes to the goal of promoting sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.
5. **SDG 12: Responsible Consumption and Production** - By reducing food waste and converting it into valuable resources (biogas and digestate), the project supports the goal of ensuring sustainable consumption and production patterns.
6. **SDG 13: Climate Action** - The project helps mitigate climate change by reducing methane emissions from decomposing organic waste in landfills and displacing the use of fossil fuels with renewable biogas.

Additional Information

For further information, please contact us at casiana@carbonexpert.ro and horia.bardeanu@genesisbiopartner.ro or visit our webpage www.genesisbiopartner.ro.

For information about Gold Standard, please visit www.goldstandard.org.