

A high-added value green company is looking for partners for HORIZON-MISS-2022-SOIL-01-10: Innovations for soil improvement from bio-waste

Summary

Profile type	Company's country	POD reference
Research & Development Request	Slovakia	RDRSK20220725004
Profile status	Type of partnership	Targeted countries
PUBLISHED	Research and development cooperation agreement	• World
Contact Person	Term of validity	Last update
Matej Smrek	25/07/2022 25/07/2023	25/07/2022

General Information

Short summary

A high-added value green company established in 2016 in Slovakia is searching for partners for Horizon Europe call. A company is focused on environmentally friendly solutions in areas of waste treatment, bioprocesses, biofuels, soil regeneration, reconstruction of unused brownfields and recyclable packaging, etc. They are currently looking for partners for HORIZON-MISS-2022-SOIL-01-10: Innovations for soil improvement from bio-waste.

Full description

The Problem: Humans have been continuously exploiting natural resources, e.g. land, forests and minerals and producing large amounts of waste. As a result, there is devastated land and emissions causing a climate crisis. There are policies that support the transformation towards a sustainable life cycle of resources, and some solutions are being developed; however, they are rather focused on recycling (1-2 times) rather than renewing the natural resources.

The Solution: The company process differs significantly. It turns waste into value by processing biodegradable municipal waste (BDMW), industrial biodegradable waste (IBDW), and waste from farming and animal production. On the output, it produces a certified biochar-based pellet-sized soil regenerator and low emission bio-fuel (bio-CNG, bio-LNG and biomethane). The company vision is to make this recycling of energy, material and organic matter in real-time in the place of biowaste origin and product consumption.

The company's product with its composition is a biochar regeneration substrate and a fertilizer at the same time - 100% natural, chemical free, environmentally friendly. It is produced by drying and pelletizing carbonised biomass and adding a natural nutrient (animal manure) and a specifically targeted natural separated solid. During the production, the manufacturer is able to regulate its future properties according to farmers requirements. It is impossible in cases of other amendments such as: peat, animal manures, plant residues and their products, compost, and vermicompost. Product has a significant liming effect, optimal nutrient content and ratios, high sorption capacity. In comparison to other amendments, the product decreases CO₂ and N₂O from soil to the atmosphere and reduce greenhouse gas emissions.

Know-how: The company process is based on the original research and development of the company and its strategic partners. The production process, products and equipment for the treatment of food waste and biomass and production of regeneration substrate are protected by four domestic and two international patents in a number of countries.

Company's contribution to the project activities:

- our client can act as a local pilot facility for processing of bio-waste and turning it to a soil improver with specific composition based on the needs of a local soil
- our client can be a pilot for a business model based on a closed-loop process that works in a perimeter of 100km and serves the local community by processing local bio-waste and turning it:
 - o to the soil improver tailored to the needs of local soil and at the same time
 - o to bioenergy for local inhabitants/municipality/industry in one waste-free and energy-independent process.
- our client can participate in testing and verifying the safety of a soil improver and the process of its production
- our client can participate in the monitoring of the pre-market processes by measuring the effectiveness of the process and economic feasibility for farmers
- Involving a wide variety of stakeholders is inevitable to ensure the widest possible benefit for local communities

The company was awarded a Seal of excellence in EIC Accelerator in 2020 and is currently implementing this project funded from national sources. The project is aimed to optimize performance and real-time metrics of the process, prepare process documentation for replication and scale-up and validation in selected locations.

Company's Pilot Site: The Horný Jatov site (SK, approximately 80 km from Bratislava) has been transformed from a devastated brownfield into an experiment and pilot production plant. It benefits from the proximity of local resources (50 km diameter) providing biodegradable agriculture, municipal and industrial waste and proximity of biofuel stations. At the same time, it serves demand for bio-fertilizers by local cereals and vegetable producers. The same pattern will be sought in commercial production sites.

Advantages and innovations

Stage of development

IPR Status

IPR granted

Sustainable Development goals

- **Goal 11: Sustainable Cities and Communities**
- **Goal 12: Responsible Consumption and Production**
- **Goal 13: Climate Action**

Partner Sought

Expected role of the partner

The expected role of the partners sought is likely to be project coordinator or project partner

Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **Other**
- **R&D Institution**
- **SME 50 - 249**
- **University**
- **Big company**
- **SME 11-49**
- **SME <=10**

Dissemination

Technology keywords

Market keywords

- **08004002 - Chemical and solid material recycling**
- **08004003 - Water treatment equipment and waste disposal systems**
- **08004004 - Other pollution and recycling related**
- **08001022 - Agricultural chemicals**
- **09005 - Agriculture, Forestry, Fishing, Animal Husbandry & Related Products**

Targeted countries

- **World**

Sector groups involved