Press Release

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A shift in the waste sector: LIFE GREEN ADAPT increases the resilience of EU waste infrastructure to climate change

The European Union has awarded 3M€ to the LIFE GREEN ADAPT project to increase resilience to climate change of waste infrastructures by the application of blue-green infrastructures

To reach climate targets, industries need to accelerate the transition towards a climate-resilient, resource efficiency, low-carbon, and circular economy. Starting from July 2021, the 42 months LIFE GREEN ADAPT project will increase the resilience of EU waste infrastructures to climate change by the application of green and nature-based solutions.

The project will focus on landfills as a potential source of severe pollution episodes when impacted by extreme weather events by demonstrating the potential of blue-green infrastructures (BGI) and ecosystem-based approaches. LIFE GREEN ADAPT will demonstrate the ability of BGI to manage flash flooding and run-off caused by heavy rainfall and prevent fires and explosions caused by droughts and unusual heat waves.

The LIFE GREEN ADAPT achieve this through (i) the development of novel bio-technosoils made of different wastes from the landfill to stabilise, recover and increase the soil quality by regulating nutrient supply and improving soil structure; and (ii) the engineering and construction of a set of innovative treatment wetlands for landfill polluted leachate and run-off water will deliver quality water, enhancing water reuse (e.g., for landfill irrigation) or discharge into natural courses. All the solutions developed in the project will be implemented at an industrial demonstration site located in the North-West of Spain to validate the potential of the BGI and ecosystem-based approaches and verify their performance under a real-scale landfill scenario. LIFE GREEN ADAPT will also support the transition to a resource-efficient and low-carbon economy by reducing water consumption and green-house gas emissions in the waste sector.

Replicability and transferability will be key aspects of the LIFE GREEN ADAPT project. It will involve a multi-level governance analysis, vulnerability risks tools and innovation workshops. These will engage various key stakeholders, including potential end-users, policy makers and investors, and address the co-creation of the solutions developed during the length of the project so they are fit for purpose.

The success of the project will be ensured by a multidisciplinary and international consortium integrated by 7 partners based in Spain, Denmark, Netherlands and Slovenia and led by the AIMEN in Spain. XILOGA, the one of the main Galician companies for the management of non-hazardous waste, will be the adopter of LIFE GREEN ADAPT solutions (end-user) and will commercialise the bio-technosoils to other waste managers, landfill owners or public authorities interested in waste valorisation and soil bioremediation. These will be: LIMNOS, a company dedicated to the development of eco-remediation solutions for environmental restoration and protection, that will commercialise BGI design and engineering; FACTOR, an international group specialised in innovative and sustainable solutions, calculation of greenhouse gas emissions and climate change vulnerability studies, will provide risk and vulnerability assessment services to public authorities in charge of waste/water infrastructures and utilities interested in implementing BGI; ISLE, a global and independent technology and innovation consultancy firm specialising in cleantech and business consulting, that will offer BGI solutions brokerage and matchmaking services to BGI developers to accelerate co-development and market uptake of their solutions; AIMEN, Universitat Politècnica de Catalunya and Aarhus University will benefit

from including the IP generated in their IP portfolio to exploit it through the optimal business model (e.g., licensing) defined in the exploitation and business strategy of LIFE GREEN ADAPT and will use knowledge developed during LIFE GREEN ADAPT in new R&I activities and training/education.

The consortium is ready to contribute to the shift towards a climate-resilient, resource efficient and low-carbon economy, aligned to the European Circular Economy Action Plan, Green Deal Communication, EU strategy on adaptation to climate change and Roadmap to a Resource Efficient Europe, among others.

Ana Pascual Formoso (AIMEN), LIFE GREEN ADAPT project coordinator said:

"*LIFE GREEN ADAPT represents an important step towards to make Europe more climate resilient on Adaptation to Climate Change. The approach proposed in the project for increasing the landfill´s climate resilience is based on a combination of technology according to Blue-Green Infrastructures and ecosystem-based solutions. In addition, this system will be able to treat approximately 20,000 m^3 of landfill leachate and 1,300 m^3 of rainwater harvested and to stabilize 0.2 ha reducing greenhouse gas emissions up to 92% (CO_2 eq)*."

Víctor Toca Achurra (XILOGA), President of the TOYSAL GROUP said:

"*LIFE GREEN ADAPT project will allow us to carry out Xiloga's waste treatment plant to a more sustainable and resilient future."*This will be done by *".. adapting our facility to the circular economy through the formulation and application of bio-technosoils, generated from mainly organic waste as fertile substrate to stabilize and revegetate our landfill and enable the regeneration of degraded areas, the purification of wastewater through different lagoons and plants integrated into nature, while ensuring stability and optimal management of the landfill by monitoring multiple parameters, contributing with this innovative project to the fight against climate change*".

Urša Brodnik (LIMNOS), said:

"*We are glad to be part of the LIFE GREEN ADAPT project, as Limnos is committed to the development and deployment of nature-based solutions for wastewater treatment and mitigation of pollution. The used approach within the project is inspired and supported by the nature and builds on cross-sectoral and interdisciplinary knowledge. The treatment wetlands for leachate treatment as part of the LIFE GREEN ADAPT demo site will strengthen climate resilience, reconsider the local water circle, and utilize the multipurpose character of the green approach.*"

Inês Ferreira (FACTOR), said:

"*Landfills are particularly sensitive to climate change stressors especially to heatwaves, floods and droughts since they are usually open-aired and exposed to these factors. LIFE GREEN ADAPT will propose recommendations and lines of action to reduce landfills vulnerability to these stressors based on an analysis of the resilience achieved by the measures implemented in the demonstration site, and on an estimation of the economic costs of climate change impacts on the landfill.*"

Prof. Blanca Antizar (ISLE), LIFE GREEN ADAPT Chair of Innovation Board said:

"*LIFE GREEN ADAPT exploitation and business strategy plan for a fast adoption of its innovative climate change adaptation technologies into the market will increase landfill infrastructure life span, resilience to flooding, droughts and spontaneous fires, save freshwater consumption and reduce greenhouse gas emissions, recover waste and save on costs associated with landfill leachates external treatment. We will align with the EU Green Deal and embrace a circular economy scenario to be replicated at EU level and beyond.*"

Dr. Jordi Morató (UPC), Director of UNESCO Chair on Sustainability said:

"*LIFE GREEN ADAPT is a great opportunity to adopt Nature-Based Solutions for the waste sector in alignment with climate change, resilience and circular economy action plans from EU Strategy. A holistic approach based on Life Cycle Assessment including the evaluation of social, economic, technical and environmental impact will be developed to validate the best suitable waste appropriate technologies. Molecular microbiology tools will be utilized to validate the design of innovative treatment wetlands.*"

Dr. Carlos A. Arias (Aarhus University), said:

"*LIFE GREEN ADAPT is a challenging project, where the consortium will establish state of the art Nature-Based Solutions to improve climate change adaptation by enhancing adaptive capacity, enhancing resilience and mitigate the effects of climate change. The adaptations proposed by the consortium will establish demonstration cases for the treatment of polluted waters to improve the quality and to manage runoff peaks while reducing greenhouse gas emissions before discharge to natural waters and to recover resources that are commonly neglected. For its novelty and the proven capacity of the technologies to be established, the project has the potential of becoming an example to follow and a reference for sites with similar challenges. Aarhus University and particularly the Aquatic Biology group, will participate in all the actions of the project and is looking forward to the developments of the project.*"

For more information, please do not hesitate to contact us.

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