

PRESS RELEASE

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PYRAGRAF Evaluates Techno-Economic and Social Impact of Mobile Pyrolysis Value Chains

To assess the real impact and feasibility of the PYRAGRAF concept, an integrated techno-economic, environmental and social evaluation of all pyrolysis-based value chains is developed in the frame of the project.

Baseline Energy and Feedstock Assessments

To establish a realistic baseline, the project is performing on-farm energy assessments across demonstrating regions. These studies analyse annual consumption profiles for electricity, gas, and diesel. By identifying seasonal peak demands and current energy management practices, the team can quantify potential reductions in emissions and energy demand once the PYRAGRAF solution is deployed.

Additionally, partners are evaluating the integration of solar energy. This analysis explores how combining thermochemical and solar inputs can reduce reliance on fossil resources, increase system resilience, and influence the feedstock availability for mobile pyrolysis units.

Sustainability and Viability Evaluations

The project's evaluation framework consists of three methods:

- Techno-Economic Assessment: Determination of capital and operational costs, potential revenue streams, and market sensitivity for the demonstrator routes.
- Life-Cycle Assessment: Quantification of greenhouse gas emissions and resource use associated with outputs such as biochar and wood vinegar.
- Social Life Cycle Assessment: Evaluation of socioeconomic impacts and local acceptance within rural communities in Portugal, Germany, and Türkiye.

Social Awareness and Stakeholder Engagement

Led by Ł-PIT with partner support, social awareness studies have been conducted among farmers in Poland, Türkiye, and Portugal. Following a literature review, a list of social "hotspots" for mobile pyrolysis was established and is currently being validated through Focus Group Interviews (FGI) with local experts. This will result in a detailed map of risks and benefits specific to various sectors and countries.



Process Modelling: From "AS-IS" to "TO-BE"

The team has developed an "AS-IS" process model focused on current pistachio waste management. This model captures every step from waste generation to disposal. By identifying existing best practices and lessons learned, the project is now designing a "TO-BE" model to demonstrate how integrated mobile pyrolysis can optimize these residues.

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