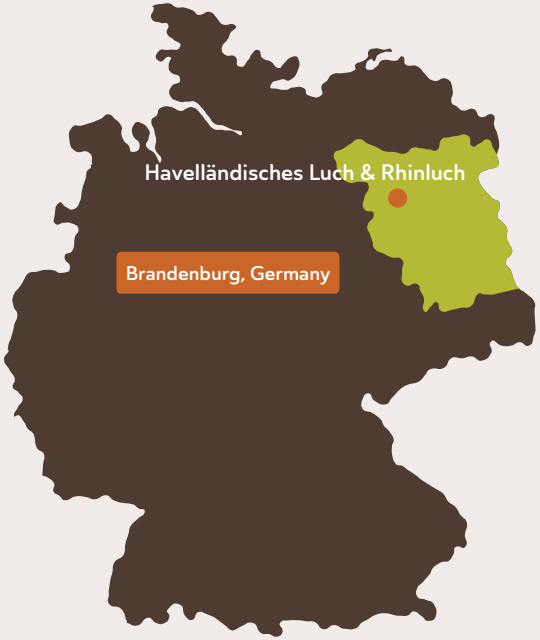
German Use Case: Paludiculture in Peat Soils



Key Information:

Location: Havelländisches Luch and Rhinluch regions, Brandenburg, Germany

Area: 165,000 hectares

Climate: Wet-humid

Bio-based products: Pellets, substrates, fibre materials (via twin-screw extrusion)

Benefits:

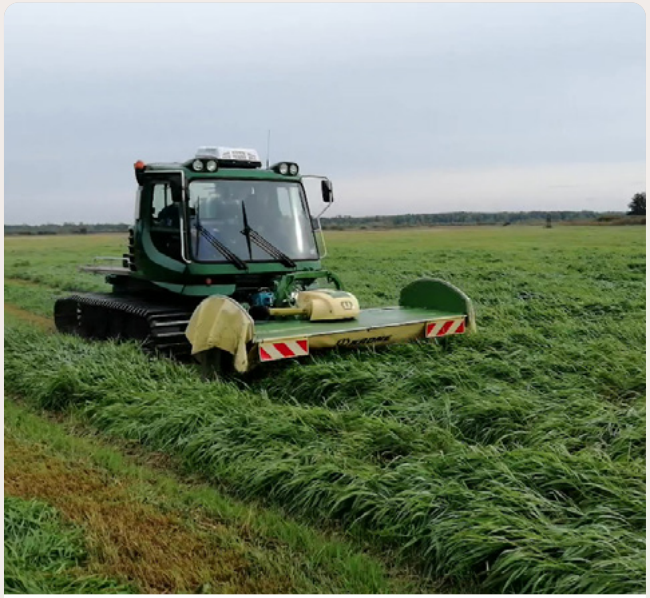
- Biodiversity enhancement
- GHG emissions reduction
- Circular use of biomass
- Soil health
- Replication potential
- New regional business models

Main Challenges

The project targets drained peat lands once used for cattle feed, which caused habitat loss and water system changes. Despite challenges, these soils offer potential for climate-smart, low-impact cultivation.

Solution within MarginUP!

Promotes the restoration and use of rewetted peatlands via paludiculture, harvesting wetland plants for bio-based materials. In partnership with research and industry, it tests processing methods like twin-screw extrusion to boost biomass usability and market readiness.



Mover on fenland. Photo: Carsten Lühr (ATB)

Stakeholders Engaged

- Local farmers and landowners
- Farming cooperatives
- Research institutes
- Local manufacturers and bioeconomy industries
- Drying and processing companies
- Policymakers and public authorities
- Water and environmental agencies

Interest Groups

- Peatland managers in other regions
- Bio-based product developers
- Climate and environmental NGOs
- Regional development agencies
- Ecotourism promoters
- Policy and funding bodies

Replication Potential

Replication potential in other rewetted peatlands in Europe. The twin-screw extrusion technology and moisture control strategies can be wider adopted by industries.

Project's Timeline

2023:

- Biomass harvested, and the production of pellet and substrate started.

2023–2024:

- Twin-screw extrusion tested and modified for wetland biomass.

2024:

- Moisture control strategies developed to improve storage and reduce losses.

2025:

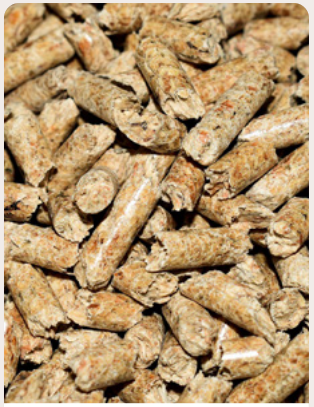
- Scale-up of biomass processing and side-stream valorisation concept.

2026:

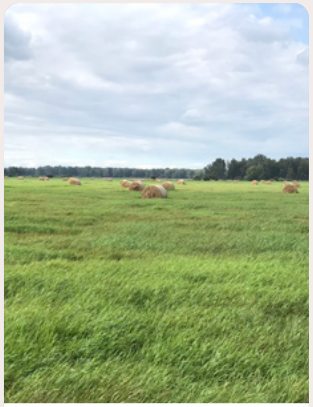
- Finalise self-sustaining supply chain and policy recommendations.

Expected Results

- Demonstration of paludiculture biomass as a viable resource.
- Technical optimisation of extrusion for wetland biomass.
- Development of marketable substrates, pellets, and fibre-based products.
- A replicable circular model linking rewetted lands to bioeconomy applications.



Fuel pellets.
Photo: Pixabay.



Use case location in Brandenburg, Germany.
Photo: J. Reger

About MarginUp!

The project is developing sustainable and circular value chains to produce bioproducts and biofuels from natural raw materials grown on marginal lands. By introducing climate resilient and biodiversity-friendly non-food crops on marginal and low-productivity lands, MarginUp! will increase farming system resilience, enhance biodiversity, and promote stakeholder participation.

margin-up.eu

www.linkedin.com/company/marginup-eu

marginup@atb-potsdam.de

Funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor REA can be held responsible for them.