ECOLOOP develops and demonstrates a set of solutions to optimise the combination of distributed energy renewable sources in rural areas, generating positive effects on air quality, biodiversity and soil health while contributing to job creation, gender equality and climate resilience and adaptation.

ECOLOOP's multidimensional approach addresses the interrelated challenges of energy, biodiversity, and rural social development:

01 **ENERGY**: ECOLOOP creates an energy ecosystem that meets local demands while promoting energy independence and environmental sustainability.

02 **BIODIVERSITY:** ECOLOOP develops innovative agricultural protocols and advancing bioproducts, generating positive effects on biodiversity and soil health.

03 **SOCIAL:** ECOLOOP fosters regional development in rural areas by creating new opportunities to enhance economic growth and stability in rural communities.

PROJECT COORDINATOR: etra I+D

PARTNERS:

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ECOLOOP

Optimization of renewable energy sources combination in rural areas to create positive effects in air quality, biodiversity, and soil health.

Start date
Octubre
2023

End date
September
2027

All the benefits of ECOLOOP solutions are demonstrated in four pilot sites across Spain, Estonia, Bulgaria, and Slovenia. These sites represent diverse spectrum of natural conditions, including different climates, soils, forests, agriculture settings, and socioeconomic factors.

Spain: Valencia

Hybridisation between biogas, Agri-PV and geothermal energy applied to horticultural crops.

Bulgaria: Albena

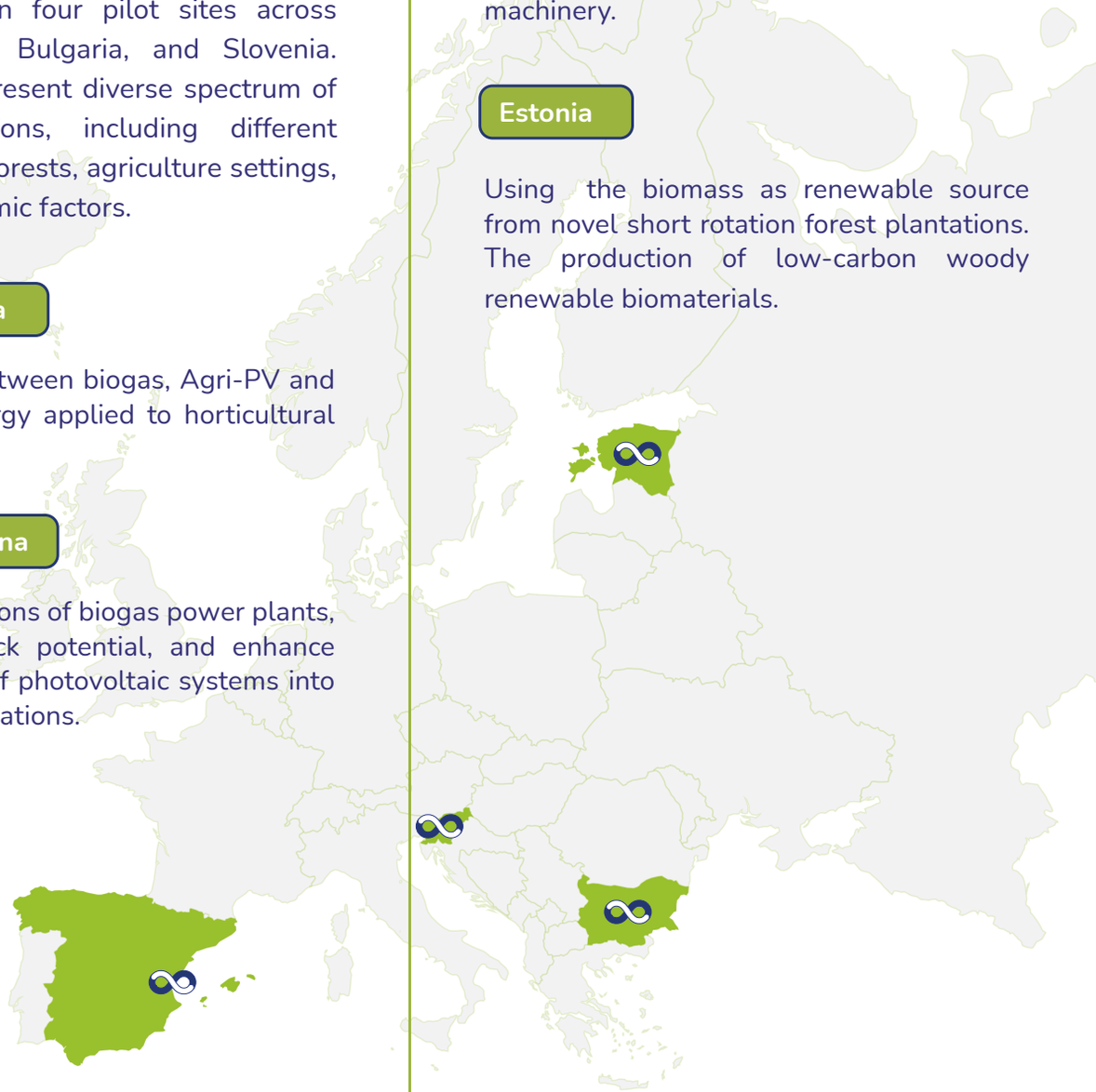
Optimise operations of biogas power plants, explore feedstock potential, and enhance the integration of photovoltaic systems into greenhouse operations.

Slovenia: Nazarje and Jablje

Modular Combined Heat and Power (CHP) system, utilisation of flexibility, biochar production and biomethane for agricultural machinery.

Estonia

Using the biomass as renewable source from novel short rotation forest plantations. The production of low-carbon woody renewable biomaterials.



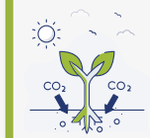
ECOLOOP provides and demonstrates a set of 7 innovations:

ECOLOOP - Biogas Production:
Develops the process for an efficient conversion of agricultural and forestry wastes into biogas.

ECOLOOP - RES Integration
Optimises the combination of distributed energy sources to ensure a reliable and sustainable supply.

ECOLOOP - Soil Health
Explores sustainable and economic biobased alternatives to traditional fertilisers to protect soil health and biodiversity.

ECOLOOP - Decision Support
Enables to monitor and control crop production remotely, while optimizing energy and resources consumption.



ECOLOOP - CO_2 Sequestration:
Assists in selecting the most suitable tree species to maximise CO_2 uptake.

ECOLOOP - Farmers Support
Provides economic and social assistance through innovative business models and financial mechanisms.

ECOLOOP - Soil Living Lab:
Offers a user-centred and transdisciplinary innovation ecosystem for improving soil health.