

12 month Post-Doctoral job offer in Environmental Science

Deadline to apply	Beginning of contract	Contract duration
November 30 th 2025	January 2026	12 months

Title of the Post-Doctoral proposal

Prospective models for the design of local and circular biomass supply chains in the context of climate change.

Keywords: Integrated approach, bio-based circular systems, climate change impacts, climate downscaling.

Context and objectives of the post-doctoral offer

Context of the project

HERBE is a 3 years project aiming at developing new methodologies and a holistic assessment of the economic and environmental impacts of highly circular biobased systems, ranging from the production of fibres to direct local use in construction and small scale heating system.

Funded by ADEME, the French agency for the ecological transition, it brings together **an unprecedented consortium of experts, scientists and professionals** from 20 laboratories, companies, local authorities and civil society actors from all disciplines.

The skills gathered cover **all disciplines of the local bioeconomy value chain** (agroforestry, soil biology, materials engineering, construction, architecture, environmental and climate science), as well as designers and social scientists (innovation sciences, law, economics).

The work of the post doc will be connected to two Working Packages:

- WP1.3 is led by Emmanuel Garbolino and it is focused on the modelling of climate change impacts on biomass resources and environmental issues (biodiversity and water). The modelling of biomass resources will consider the evolution of the environmental factors at local scale and the evolution of the site activities.
- WP 3.2 is led by Thomas Beaussier and focuses on the absolute environmental assessment of the local biomass supply chain. Using methods and databases based on life cycle assessment and planetary boundaries, it aims at developing a parameterized model of the biomass flows to map in site and off site impacts, in order to sustain a holistic eco-design tool at the scale of the Ecovillage and its surrounding communities.

The postdoctoral research will focus on modelling a circular, locally sourced biomass supply chain for scenario analysis and system design. The approach will integrate data from in-situ measurements (soil, water, biodiversity inventories), growth model outputs informed by climate scenarios, and measurements and databases describing transformation processes, in order to model the biomass supply chain from the ecosystem to its final uses in detail. The objective is to deliver a comprehensive sustainability assessment of the system under a range of climate change and rural development scenarios.

This work will be carried out within an interdisciplinary consortium, involving close collaboration with environmental scientists—working on carbon stocks, soil quality, and biodiversity modelling—as well as social scientists engaged in the ecodesign process.

ISIGE and Mines Paris PSL

ISIGE Mines Paris-PSL is the Mines Paris center dedicated to the environment and sustainable development. Its ambition is to be a driving force in the ecological transition and to promote the consideration of planetary boundaries in the strategies of companies and public actors.

Mines Paris - PSL deploys multi-disciplinary research at the highest international level, focusing on large-scale projects in response to the strategic needs of the business world. This approach is based on a strong link between academic excellence and socio-economic impact, with strong ties to industry, making Mines Paris-PSL the leading French school in terms of research partnerships.

Candidate profile

Candidates must have a PhD in one of these fields: Science of the Environment / Agriculture and/or Forest science.

Candidates must have skills in Programming, Statistics, Modeling.

A good level in scientific and technical English is required.

Academic affiliation & office location

The candidate will be affiliated with Mines Paris PSL – ISIGE centre, 38 rue Saint-Honoré, 77300 Fontainebleau (France).

Post-Doctoral supervisors

- Emmanuel Garbolino (Mines Paris PSL – ISIGE) expert in Biodiversity and Climate Change.
- Thomas Beaussier (Mines Paris PSL – ISIGE) expert in Life Cycle Assessment and Metabolism of Biomass supply chains.

Funding

This post-doctoral contract is part of the HERBE project funded by ADEME.

Application procedure

Applications should be sent to:

- Thomas Beaussier (Thomas.beaussier@minesparis.psl.eu)
- Emmanuel Garbolino (emmanuel.garbolino@minesparis.psl.eu).

Applicants are required to submit a letter of motivation, a detailed curriculum vitae, the contact details of two or more referees, and, at their discretion, any evidence of their ability to engage in research activities (scientific articles, technical reports, PhD report, etc.).