

CALL FOR APPLICATION PHD POSITION

Mineral Markets and Recycling Development

Center for Environmental Economics – Montpellier (CEE-M)
University of Montpellier

KEY INFORMATION

Duration	3 years (2026–2029)
Start date	September 1 st or October 1 st , 2026
Location	CEE-M, University of Montpellier, Montpellier, France
Enrollment	École Doctorale Economie Gestion de Montpellier
Funding	French doctoral contract at University of Montpellier financed by the ANR program “The Subsurface: A Common Good”, France 2030

RESEARCH CONTEXT

This PhD project aims to analyze how the development of recycling and the emergence of the “urban mine” are transforming mineral resource markets. As metals recovered from scrap and end-of-life products become an increasingly important source of supply, recycling activities are beginning to share key characteristics with primary mining industries. However, unlike geological mines, the composition of the urban mine is determined by product design choices and waste management systems.

The project seeks to investigate how the expansion of recycling reshapes metal supply structures, price dynamics, and industrial strategies. It will examine whether and to what extent a growing share of secondary materials can reduce commodity price volatility. Such transformations may also affect investment incentives in mining and recycling industries, as well as the strategies of industrial actors. The PhD position is financed by the French national research agency within the framework of the “Technical and Economic Foresight” project of the PEPR The Subsurface: a Common Good.

The research will combine tools from natural resource economics, industrial organisation and quantitative approaches. Particular attention will be paid to imperfectly competitive market structures, characterized by high fixed costs and opportunities for intertemporal strategic behaviour. The analysis shall provide enlightened and original guidance for public regulation: contract design for natural monopolies in the collection of end-of-life products; mineral concession contracts; competition policy; product design standards; waste sorting regulation; and recycling policies.

Finally, the project aims to derive empirically testable predictions. Since comprehensive data on recycling activities remain limited, the research can involve the construction of original datasets based on publicly available industry information, administrative sources, and sectoral case studies.

METHODOLOGY

The project will combine formal theoretical modelling with empirical approaches, drawing on:

- ▶ Natural resource economics, including Hotelling-type exhaustible resource models extended to incorporate secondary supply.
- ▶ Industrial economics, with particular attention to imperfectly competitive market structures characterized by high fixed costs, intertemporal strategic behavior, and potential market foreclosure.
- ▶ Design of public regulation in the presence of externalities, market power or incomplete markets.

- ▶ Quantitative and empirical methods, including the construction of original datasets based on publicly available industry data, administrative sources, and sectoral case studies.

The research is expected to yield predictions with implications for public policy design.

SUPERVISION STAFF

Potential supervisors: [Francesco Ricci](#) (CEE-M, Uni de Montpellier), [Carole Haritchabalet](#) (Uni Pau et des Pays de l'Adour, TREE), [Raphael Soubeyran](#) (CEE-M, INRAE) and [Mouez Fodha](#) (Paris School of Economics)

Other research team members include [Aude Pommeret](#) (IREGE, Uni Savoie Mont Blanc) [Jérôme Pouyet](#) (THEMA, ESSEC Business School); [Wilfried Sand-Zantman](#) (ESSEC Business School, TSE) ; [Florian Fizaine](#) (IREGE, Uni Savoie Mont Blanc)

CANDIDATE PROFILE

We are looking for a highly motivated candidate with:

- ▶ A master's degree in economics, with a strong background in microeconomics and/or industrial organization and/or analysis of dynamic economic systems.
- ▶ Solid training in mathematical methods and economic modelling.
- ▶ An interest in environmental and resource economics.
- ▶ Good writing skills in English; knowledge of French is an asset but not required.
- ▶ The PhD candidate is expected to participate to activities of the [Center for Environmental Economics – Montpellier](#), in particular seminars and workshops.
- ▶ She or he is also expected to contribute to the research group “[The Technical and Economic Foresight](#)” project of the PEPR “The Subsurface: a Common Good” of the Agence Nationale de la Recherche.

HOW TO APPLY

Applications should include the following documents, compiled into a single PDF:

- ▶ A cover letter (1–2 pages) describing your research interests and motivation.
- ▶ A curriculum vitae.
- ▶ Academic transcripts.
- ▶ A writing sample (master's thesis, research paper, or similar).
- ▶ Contact details of one or two academic referees willing to provide a letter of recommendation.

Applications should be sent to:

Francesco Ricci — francesco.ricci@umontpellier.fr

Review of applications will begin immediately. The position will remain open until filled.