

UMI SOURCE-Université Paris-Saclay/Climate Economics Chair Internship offer

Assessing Power System Vulnerability to Blackout Risks under Climate and Economic Uncertainty

Context

This position is funded by the PowDev project (PEPR TASE), which aims to analyze and optimize the resilience of power systems facing high integration of renewable energy sources. The project develops decision-support tools that account for extreme events, network complexity, and various socio-economic scenarios. More specifically, PowDev focuses on:

- simulating and analyzing blackout scenarios in highly renewable power systems
- integrating current and future extreme weather events
- incorporating realistic electrotechnical constraints and interactions with other critical infrastructures
- developing models to assess the economic and societal impacts of blackouts.

This research will contribute to enhancing the resilience of future power systems by combining climatic, technical, and socio-economic dimensions within advanced optimization and decision-making frameworks.

Mission

The recruited researcher will join the economic department of **UMI SOURCE** (Université Paris-Saclay, UVSQ, IRD). The overarching objective is to better understand the vulnerability of the French power system to blackout risks, taking into account interactions between climatic, economic, social, and financial factors.

- Contribute to designing a comprehensive database combining economic data (energy prices, investments, GDP), social data (consumption, energy poverty), and financial data (capital costs, investment risks)
- Build a classification of consumer profiles based on the constructed database
- Participate in identifying and characterizing relationships between these variables in order to analyze vulnerability transmission channels and pathways
- Conduct an initial analysis of key indicators for assessing the resilience of the electricity system under extreme events
- Contribute to the preliminary development of an energy vulnerability indicator, in collaboration with project researchers and engineers.

Profil

This position is intended for Master's students or engineering students specializing in **energy economics**. Knowledge of the electricity sector or at least energy markets is required. Strong skills in database management are also expected.

Duration of internship: 6 months from March/April 2026

Internship location: Chaire Economie du Climat, Palais Brongniart, 28 Place de la Bourse, 75002

French legal internship allowance

Contact and documents : send CV, covering letter plus Master 1 grades and available Master 2 grades in a **SINGLE PDF** to contact@chaireeconomieduclimat.org indicating the title of the internship (maximum 2 applications out of all the CEC internships offered).

Application closure: January 12, 2026

Interviews from January 13, 2026

Final response to applicants: January 31st, 2026