



Postdoctoral Fellowship in Economics

Economic Assessment of a project coupling CCS and Geothermal Energy

The Laboratory of Economics of Orléans (LEO) is proposing a one-year Postdoctoral Fellowship in Economics, on the economic assessment of a new technology coupling CCS and geothermal energy, the CO₂-DISSOLVED project. This project is supported by the French national program of investment for the Future (Investissements d'Avenir) in the Geodenergies Scientific Platform (GIS).

The CO₂-DISSOLVED project, headed by the BRGM, is developing an innovative technology that associates the capture of CO₂ in industrial smoke, its local storage dissolved in the brine of a deep saline aquifer, and the recovery of geothermal energy. This technology is well adapted to small carbon sources (less than 100 000 tCO₂/year), without the major drawbacks of conventional CCS in supercritical state (in terms of energy consumption and storage safety). The economic feasibility of this technology has already been assessed on an application for a bio-ethanol facility funded by the ANR (French National Research Agency) for the period 2013-2016.

The aim of this post- doctoral fellowship is to extend this assessment, regarding the implementation of a first pilot of this technology, and then evaluating its economic potential. The following aspects of the project will be addressed:

- Characterizing the Economic context of this innovation, regarding different alternative technologies, like carbon valorisation, other geothermal energy applications, and CCS on Bioenergy. The CO₂-DISSOLVED technology appears either as a complementary or a competing technology with these technologies, with important consequences on its future deployment.
- Improving the survey of the sites enabling a good matching between carbon and geothermal energy sources. This survey could lead building up a typology of the different potential using sectors of the CO₂-DISSOLVED technology.
- Developing a simplified general model enabling a quick evaluation of a project, taking account of the different lifetimes of carbon injection, and of geothermal energy disposition, due to the progressive cooling of the well.

The candidate, doctor in environment, energy or industrial economics, will work in a multidisciplinary team (geologists, engineer, sociologists, and lawyers). A good knowledge of CCS technologies, geothermal energy and geology would be highly appreciated.

More information:

- The postdoctoral contract will be jointly supervised by Mr Xavier Galiègue (LEO, University of Orléans) and Mrs Audrey Laude-Depezay (REGARDS, University of Reims Champagne Ardennes).
- The net wage will be about 2050 € net a month.
- Contract beginning: January 2017, for one year.
- Applications will have to be sent to the following addresses: xavier.galiègue@univ-orleans.fr et audrey.laude-depezay@univ-reims.fr, before November 18th 2016.
- Candidate will send a detailed curriculum vitae, a cover letter, and a copy of Ph.D. diploma or the defense date confirmed by a letter from the thesis supervisor.