

Project researcher (m/f/x) for the LEILAC2 project

Context

The Royal Belgian Institute of Natural Sciences (RBINS) is a world-class research institute covering a wide range of disciplines from biology to geology, oceanography to taxonomy and paleontology to ecology. Its Directorate Earth and History of Life is the most important research centre devoted to Earth Sciences (geology, palaeontology and archaeosciences) in Belgium. It is composed of about 65 statutory and contractual staff members. Laboratories have a comprehensive range of modern equipment for mineralogical and petrophysical analysis. The Geological Survey of Belgium (GSB) is an autonomous subsection of the RBINS OD Earth. Created in 1896, the GSB is a key geological and mineralogical research centre developing both applied and fundamental research approaches. It is also an independent, non-commercial provider of geoscientific services. These services are oriented towards local, regional, federal, European and international authorities, as well as researchers of institutions/universities and research groups, private companies, NGO's and citizens. In spite of retaining this profile and strong societal focus, which is typical for the geological surveys of Europe, the GSB has at the same time become one of the most research-oriented Surveys in Europe, evidenced by a rapidly increasing scientific output in recent years.

The GSB's GeoEnergy team has built unique expertise in the techno-economic analysis of geo-energy applications and the integration of uncertainty. The RBINS-GSB is partner in the EU-funded LEILAC2 project on CO₂ capture from cement industry, and its subsequent transport and geological storage. This project will develop and install a demo-scale CO₂ capture plant at the site of one of the world's largest cement companies. An integrated geo-techno-economic analysis of the project and its possible future expansion is necessary to judge the practical feasibility and justify the investments.

The GSB leads the following tasks within the project:

- The investigation of off-shore storage options and CO₂ cluster development.
- The techno-economic analysis of several project scenarios.
- Business case development based on the most favorable scenarios.

Tasks

You will cooperate within the LEILAC2 project by developing and performing techno-economic simulations and forecasts for a CO₂ capture, transport and storage (CCS) project/network centering around a German cement plant. For this, you will collect relevant cost- and operational data from literature and the other project partners on the full CCS chain (CO₂ source, possible other sources, transport options and geological storage sites) and build simulation scenarios in consultation with the other partners.

Analyses will be performed using spreadsheet models and the in-house developed PSS simulator. PSS is a geo-techno-economic forecasting simulator for CO₂ geological storage. It is VBA-MS Access based and integrates reservoir behavior directly into the economic analysis, especially to deal with uncertainty and flexibility in a more realistic way. The spreadsheet models and the PSS simulator will require additional development to suit the case study and methodological updates.

You will generate, present and interpret simulation results. These will be processed in terms of a business case, showing the influence of decisions and scenarios on project value (NPV, IRR...) and development.

Because of the international nature of the project, you are available for occasional travel within Europe (depending on COVID-19 restrictions).

You will also be included in the daily workings of the GSB, which, as mentioned, covers a whole range of geoscientific services. According to your expertise, you will be engaged in lab analyses, fieldwork and geological descriptions of samples and outcrops.

Diploma

You hold a Master's degree in Earth Sciences.

Technical competence

- You have an interest in the climate change issue, geo-energy applications and CO₂ storage in particular.
- You are acquainted with the geology of Belgium.
- You have experience with economic analyses.
- You can work independent, according to scientific principles, and are able to produce and present high-quality results.
- You can report and communicate at a scientific level, both within the project (reports, meetings) and scientific channels (publications, conferences).
- You are able to “think outside the box”, and integrate different (scientific) domains.
- You have advanced knowledge of MS Office applications, especially Excel and Access, and are able to use Visual Basic for Applications.
- You are no stranger to a GIS (Geographic Information System) environment.
- The LEILAC2 project is a European international project. Good knowledge of English is therefore mandatory.

Assets

- A PhD in Earth Sciences.
- Experience with techno-economic simulations, real options analysis, uncertainty analysis etc.
- Experience in CO₂ capture, transport and storage projects.
- The working environment in Brussels is bilingual Dutch and French. Knowledge of either is a plus.

We offer

- You will receive a full-time contract for one year at the SW1 salary level (scientific personnel), starting early 2021, with a possible prolongation of one year
- You will be working at the Geological Survey of Belgium, Jennerstraat 13, 1000 Brussels, Belgium.
- Full reimbursement of public transport for commuting is possible, or a bicycle allowance if you come to work by bike.

How to apply

Send your application letter and CV to kris.welkenhuysen@naturalsciences.be and karine.wuyts@naturalsciences.be. Only applications by e-mail will be considered. The application procedure will close on 29 November 2020.

Interviews will be organized on 7 and 8 December 2020. Applicants need to be available both days and be available by e-mail or phone on 3 December 2020 to confirm their availability if they are selected for the interview.

<https://www.naturalsciences.be/en/about-us/organisation/jobs#anchor19368>