



Conducting research for a changing society: This is what drives us at Forschungszentrum Jülich. As a member of the Helmholtz Association, we aim to tackle the grand societal challenges of our time and conduct research into the possibilities of a digitized society, a climate-friendly energy system, and a resource-efficient economy. Work together with around 7,500 employees in one of Europe's biggest research centres and help us to shape change!

Achieving a greenhouse gas-neutral energy supply is one of the greatest challenges of the 21st century. At the Institute of Climate and Energy Systems – Jülich System Analysis (ICE-2), we are investigating how potential cost-effective transformation strategies can be designed to achieve this goal. The scientific work of the Sector Coupling team focuses on the techno-economic modeling of coupled infrastructures for the transport and distribution of electricity, natural gas, hydrogen, heat, and other end-use energy carriers. Join our research team, contribute your ideas and creativity, and help shape what a future greenhouse gas-neutral energy system for Germany and Europe could look like.

We are offering a

PhD Position - CO2 transport and storage: Key to the European energy transition

Your Job:

The transformation of the European energy system to greenhouse gas neutrality will promote independence from fossil fuels. However, it raises the question of how to deal with emissions that cannot be avoided for technical or economic reasons. In the future, these must be captured and stored, used as raw materials, or offset by negative emissions. It can be assumed that storage and utilization sites will not be located directly at the source of emissions, which will require transport infrastructure. As part of this work, you will model spatially resolved transformation paths for the energy system in Germany and Europe and analyze the role of CO2 infrastructures in the design of energy infrastructures. Based on the findings of a related doctoral thesis, options for CO2 capture and utilization and options for negative emission will be integrated into the model. In doing so, you will explore various questions, such as: Where do remaining emissions occur and how can they be dealt with? What infrastructure is needed? What is a cost-effective design for this infrastructure and what framework conditions need to be created? To answer these questions, you will perform the following tasks:

The job will be advertised until the position has been successfully filled. You should therefore submit your application as soon as possible. We look forward to receiving your application via our

Online-Recruitment-System!

Questions about the vacancy?

Get in touch with us by using **our contact form.**

Please note that for technical reasons we cannot accept applications via email. www.fz-juelich.de



- Identifying relevant technologies for mapping CO2 infrastructure in integrated energy system models
- Enhancing an existing energy system model focusing on CO2 infrastructures
- Analyzing the impact of CO2 on the energy systems design in Germany and Europe
- Active participation in scientific and public discourse (including publishing in peer-reviewed scientific journals)

Your Profile:

- A completed Master's degree in the field of natural or (industrial) engineering, informatics, or a related field of study
- Very good knowledge of energy technology, energy economics and energy politics
- Initial experience in energy system modeling is advantageous
- Good programming skills (e.g., Python)
- High degree of independence and willingness to show great commitment
- Very reliable and conscientious work style
- Fluent written and spoken English and German

Our Offer:

We work on highly topical, socially-relevant issues and offer you the opportunity to actively shape change! We offer you optimal conditions for the successful completion of your doctorate:

- The opportunity to complete a doctoral thesis within 3 years through professional supervision and internal support services
- A highly motivated working group as well as an international and interdisciplinary working environment in one of the largest research institutions in Europe
- Active further development of a comprehensive energy system model in order to support energy policy decision-makers in a scientifically sound manner
- Excellent scientific and technical infrastructure
- Opportunity to participate in (international) conferences and project meetings
- Continuous professional support by your scientific supervisor(s)
- A large research campus in the countryside, which offers the best opportunities for networking with colleagues as well as for a sporty balance besides work
- Best conditions for successful work in a home office (moving to the Aachen-Düsseldorf-Cologne region is not absolutely necessary)
- 30 days of annual leave and provision for days off between public holidays and weekends (e.g. between Christmas and New Year)
- Further development of your personal strengths, e.g. through an extensive range of training courses; a structured program of continuing education and networking opportunities specifically for doctoral researchers via JuDocS, the Jülich Center for Doctoral Researchers and Supervisors: https://www.fz-juelich.de/en/judocs
- Targeted services for international employees, e.g. through our International Advisory Service

In addition to exciting tasks and a collaborative working atmosphere in Jülich, we have a lot more to offer: https://go.fzj.de/benefits

The position is initially for a fixed term of 3 years. Pay in line with 75% of pay group 13 of the Collective Agreement for the Public Service (TVöD-Bund) and additionally 60 % of a monthly salary as special payment ("Christmas bonus"). The monthly salaries in euros can be found on page 66 of the PDF download: https://go.fzj.de/bmi.tvoed Further information on doctoral degrees at Forschungszentrum Jülich including our other locations is available at: https://www.fz-juelich.de/gp/Careers_Docs



We welcome applications from people with diverse backgrounds, e.g. in terms of age, gender, disability, sexual orientation / identity, and social, ethnic and religious origin. A diverse and inclusive working environment with equal opportunities in which everyone can realize their potential is important to us.

Further information on diversity and equal opportunities: https://go.fzj.de/equality