At the Institute of Energy and Climate Research – Energy Systems Engineering (IEK-10) we focus on the development of models and algorithms for simulation and optimization of decentralized, integrated energy systems. Such systems are characterized by high spatial and temporal variability of energy supply and demand as well as by a high degree of interdependence of material and energy flows. Our research at IEK-10 aims to provide scalable and faster than real-time capable methods and tools which enable the energy-optimal, cost-efficient and safe design and operation of future energy systems.

We are looking to recruit a

**Postdoc Position - Modelling and Simulation of Energy Grids**

**Your Job:**
The increasing share of fluctuating renewable energies in electricity generation leads to increased volatility as well as a strongly changed distribution of the power fed into the grid. This increases the requirements on the flexibility of the system and the operation of power grids. Additional electricity demand to decarbonize various energy sectors, such as transport and heating, as well as intersectoral flexibility options such as power-to-X lead to increasing sectoral interdependencies. Your task is to support our institute in the development of multi-modal energy models that are able to analyze this interaction of energy networks (electricity, gas, heat) and markets at high resolution.

Your areas of research will include among others:
- Analysis of current and future flexibility options, PtX technologies and industrial processes
- Evaluation of how sector coupling can be used to increase the flexibility of power systems, e.g. V2G technologies, and design of new methods and measures for optimisation
- Development of new methods in modelling and analysis of local and regional energy grids

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
• Analysis of the stationary and dynamic characteristics of current and future energy systems characterized by high shares of renewable energies and increasing sector coupling

Your tasks will include among others:
• Conducting research in the framework of the topic listed above
• Modeling and programming of energy systems
• Supervision of students and doctoral candidates
• Acquisition and leading of research - third-party founded - projects
• Representation in national and international networks
• Presentation of your research results at (international) meetings and conferences, as well as in the form of publications in relevant journals
• Supporting the director in teaching and exercises for students

Your Profile:
• Excellent Master’s degree in electrical engineering or a comparable field
• A Ph.D. relating to energy systems, power systems modelling and simulation
• Deep understanding of energy markets and grids
• Extensive experience in static and dynamic modelling of grids
• Programming skills, preferably in Python, Matlab and C
• Fluent written and spoken English and/or German
• Excellent ability to work as part of a team and in a cooperative manner
• Independent and analytical style of working

Our Offer:
We work on the very latest issues that impact our society and are offering you the chance to actively help in shaping the change.

We support you in your work with:
• A highly motivated research group in one of the biggest research centers in Europe
• An excellent scientific and technical infrastructure
• Participation in project meetings and conferences
• A large research campus with green spaces, offering the best possible means for networking with colleagues and pursuing sports alongside work
• A full-time position with the option of slightly reduced working hours and 30 days of annual leave
• Targeted services for international employees, e.g. through our International Advisory Service

We offer you an exciting and varied role in an international and interdisciplinary working environment. The position is initially for a fixed term of 2 years, with possible long-term prospects. Salary and social benefits in conformity with the provisions of the Collective Agreement for the Civil Service (TVöD).

Forschungszentrum Jülich promotes equal opportunities and diversity in its employment relations.

We also welcome applications from disabled persons.