

APPLY 25-2022

# Research Scholar in Modeling of National Energy Transformations

IIASA ENERGY, CLIMATE, AND ENVIRONMENT (ECE) PROGRAM

**IIASA is looking to recruit a motivated and talented researcher in modeling of national-level energy transformations and their impact on the economy, the environment, and more broadly on sustainable development goals to join the Energy, Climate, and Environment (ECE) Program.**

## BACKGROUND

As one of the leading global Integrated Assessment Modeling (IAM) teams, the IIASA [Energy, Climate, and Environment \(ECE\) Program](#) conducts research on a wide range of issues related to energy sector transitions in the context of climate change and broader sustainable development challenges. Building upon a long tradition at IIASA going back to its foundation, ECE's modeling tools stand at the heart of the IIASA IAM framework, exploring linked solutions for energy, food, land, and water. ECE is the developer of the open-source [MESSAGEix](#) modeling framework and its extensions, which is a framework for analyzing energy transitions pathways and policies that can shape those transitions. ECE's research is at the interface of science, policy, and society, with the purpose of informing international policy efforts, such as those related to the Paris Agreement or the Sustainable Development Goals (SDGs) and assessing synergies and trade-offs between them.

## THE ROLE

The successful candidate will join an interdisciplinary team analyzing issues related to national and regional energy transformations in various parts of the world with the aim of producing policy relevant insights and contributing to just and equitable transitions. The research will focus on modeling energy systems and their interlinkages with the other sectors of the economy, in the context of climate change mitigation and sustainable development. The selected candidate will work with a team of passionate and highly skilled modelers to further develop and apply the open source [MESSAGEix](#) modeling framework to areas more specific to national energy transitions. The incumbent will collaborate with internal and external partners for conducting energy planning studies in various countries with different potentials and challenges, including different views to energy security and sustainable development. The post-holder will develop novel methodologies tailored for analyzing country-specific research questions in the above-mentioned topics.

## MAIN DUTIES AND RESPONSIBILITIES

- Contribute to the analysis of energy policies, emission reduction targets, and national energy plans within the context of broader sustainable development goals (including equitable access to modern energy services, mitigating air and water pollution, reducing waste and material use, etc.)

- Develop new methodologies, models/modules, and innovative model-linkage frameworks for an integrated assessment of national energy transformations including emerging challenges/solutions in this field
- Collaborate with team members to co-develop an open-source integrated assessment modeling framework (MESSAGEix), and apply/adjust the tool to respond to different research questions pertinent to national and regional energy transformations
- Analyze complex energy problems by the aid of quantitative modeling tools and distil policy-relevant insights from modeling exercises
- Work with large datasets and apply data management tools for analyzing data
- Apply Geographical Information System (GIS) tools, maps, and other techniques such as machine learning, downscaling and aggregation to analyse data across different temporal and spatial resolutions
- Develop and document version-controlled code using collaborative modeling platforms
- Present complex energy issues and modeling insights to a wide range of stakeholders with various backgrounds in a comprehensible and effective manner
- Document and publish research outcomes in the form of policy briefs, technical reports, scientific articles, etc.,
- Contribute to ongoing and future projects, participate in proposal writing and fundraising initiatives, and coordinate administration of relevant projects
- Communicate and co-develop energy planning models and studies together with other researchers and external collaborators from different countries with various levels of expertise in energy system modeling
- Contribute to capacity building, training, knowledge sharing and dissemination activities through both online and physical platforms
- In line with the team spirit that prevails at IIASA, the incumbent may occasionally work on other tasks assigned by their superiors, that might not be directly related to this appointment but where the post holder has relevant experience and skills, and/or a shortage of immediate personnel capabilities requires such.

## SKILLS, QUALIFICATIONS AND EXPERIENCE

- PhD degree (or equivalent) or master's degree (or equivalent) plus research experience in a related field in energy economics, energy engineering, operations research and systems analysis, or related field
- Systematic understanding of and hands-on experience with energy system optimization models and/or integrated assessment modeling would be important
- Domain knowledge on energy transitions, their enablers and barriers in both energy supply and demand sectors, and the role of energy policy, markets, and technological change, in the context of climate change mitigation and sustainable development
- Knowledge on systems integration of variable renewable energy and required flexibility options, energy storage technologies, and emerging distributed energy solutions is required
- Experience in energy planning studies, policy analysis, and/or energy systems modeling at the national and regional (multi-country) level is an

## APPOINTMENT TERMS

The selected candidate should be available to take up the position as soon as possible. We offer an initial fixed-term, one year, full-time (40 hours per week) employment contract, with the possibility of extension after the first years' work. Eligible applicants wishing to work part-time hours will also be considered.

Duties will be carried out at the IIASA premises in Laxenburg, near Vienna in Austria (up to 100 days per year home office working within Austria possible).

The corresponding profile for these opportunities is **R2** according to the [IIASA researcher profiles for research careers](#). IIASA does however, reserve the right to hire a researcher with a lower profile, and at a corresponding lower salary than the minimum stated below, if the qualifications and professional experience of the selected candidate do not meet the criteria described in the researcher profiles adequately.

## WE OFFER

A **minimum** gross annual, full-time salary of EUR 44,204.00 for R2 research scholars.

important merit

- Experience with quantitative modeling and programming skills in Python, R and/or GAMS are essential
- Passionate about the role of science in resolving complex energy-related problems and motivated to make a positive impact on low-carbon, equitable and just energy transitions
- Fluency in English and recorded experience in writing high-quality publications is an asset
- Excellent presentation, interpersonal and communication skills, with creativity in presenting complex topics in an effective and digestible manner to a broad range of audiences
- IIASA offers an interdisciplinary and international workplace, and the possibility to interact with researchers of different nationalities, with strong ties to a world-wide network of research institutions engaged in environmental systems research. The successful candidate must be able to work in, and have respect for, an intercultural, gender-neutral, and inclusive environment, and [IIASA core values](#).

The advertised salary is:

- Exempt from income tax in Austria
- Negotiable, based on the qualifications, skills and experience of the selected individual.
- Subject to deductions for health insurance and/or social security.
- Not directly comparable with other employers in Austria, due to the unique legal status and privileges granted to IIASA.
- Subject to the principle of income aggregation (Progressionsvorbehalt in German).

### IN ADDITION:

- Educational subsidies for children of school age enrolled in private schools in Austria.
- A generous annual leave allowance.
- Moving and settlement allowances and paid home leave for employees in scientific and professional categories hired from international locations.
- Assistance for newcomers to Austria with visa, work and residency permit applications.
- Support finding accommodation in Austria.

Further details [here](#).

## About IIASA

IIASA is committed to a working environment that promotes equality, diversity, tolerance and inclusion within its workforce. This is reflected in our [IIASA core values](#). We encourage qualified candidates from all religious, ethnic, and social backgrounds to apply. In the case that candidates are equally qualified, preference will be given to applicants from countries where IIASA has a [National Member Organization](#) (NMO).

## Further Information

For further information about this opportunity please contact:

[Dr. Volker Krey](#), IACC Research Group Leader and Senior Research Scholar

For general information about working at IIASA: [recruitment@iiasa.ac.at](mailto:recruitment@iiasa.ac.at)

## Applications

To apply for this opportunity, you will need to provide the following documents in English:

- A cover letter outlining your motivation for and fit to the position
- A detailed Curriculum Vitae
- The names, addresses (including e-mail), and telephone numbers of two work-related reference givers.

Review of applications will begin immediately.

Deadline for receipt of applications: until filled

[APPLY](#)