Researcher/Modeler - decent living standards

The Sustainable Service Systems (S3) Research Group within the Energy, Climate, and Environment (ECE) Program at IIASA is recruiting a researcher in Integrated Assessment Modeling with an emphasis on energy needs, decent living standards, and human wellbeing.

BACKGROUND

The IIASA Energy, Climate, and Environment (ECE) Program is one of the leading scientific research institutions in the domain of integrated assessment of climate change and the systems transition to implement the Sustainable Development Goals (SDGs). IIASA has a long-standing tradition in the development of scenarios with strategies for climate mitigation, and also has spearheaded discussions on energy access and energy poverty. This position is about the intersection between these two streams of work: developing the tools that can quantify futures with environmental action and decent living for all.

The desired **Early Career Researcher** will contribute to developing open-source modeling methods and data to study the characteristics of energy and other resource needs in transitions, across sectors. The successful candidate will work with the **DESIRE** model (Kikstra et al., in review) that links bottom-up energy and resource needs with climate scenarios produced with models like **MESSAGE***ix* (https://docs.messageix.org). The objective of the research is to model sustainable and just transitions in order to support policy making at different scales. The candidate is expected to join existing research efforts (e.g., just transition pathways activities for the Earth Commission or the EU Horizon project ELEVATE), while also helping identify, plan, and create new opportunities and research directions.

THE ROLE

The work will include, but is not limited to:

- Development and application of the DESIRE model and related software and data sets, potentially including the MESSAGE*ix* modeling framework.

- Complementary, quantitative analysis of the energy and other resource (e.g., materials) needs, including service provisioning in the buildings sector, the transport sector, and industry.

- Analysis of Decent Living Standards deprivations.

- Analysis of energy and other resource needs through using Life Cycle Analysis tools and Environmentally-Extended Input-Output tables.

- Development of equitable and just energy demand scenarios, through narratives incorporating all of the above phenomena.

The successful candidate will also represent IIASA and ECE in contributions to ongoing, multi-institution projects and fora, such as ELEVATE, the EDITS project, and follow-up studies from the JustTrans4All project.

MAIN TASKS AND RESPONSIBILITIES

The successful candidate will closely collaborate with researchers from the IIASA ECE Program in addressing the following tasks:

- Contribute to developing to conceptual models of human needs and Decent Living Standards, by identifying relevant methods from the literature; improve on these; source appropriate data/measures from diverse sources; and implement analysis with a high degree of rigor. For instance, derive final energy intensities (and material intensities) from Life Cycle Analysis and Input-Output data, and model efficiency improvements.

- Assist with the development and maintenance of the DESIRE model according to recognized best practices in scientific software development.

- Produce figures, maps, and visualizations to check results and efficiently communicate findings.

- Collaboratively develop model code that is version-controlled, documented, and reproducible, to enable low-cost adaptation of methods for different spatial scopes and/or input data sets.

- Present methods and results to both technical and non-technical audiences. Initiate and organize conference sessions and workshops.

- Use post-processing modules (such as a tool downscaling regional data to the national level) related to MESSAGEix and other modelling tools.

- Analyze and describe scenario ensembles created with Integrated Assessment Models.

- Contribute to, and lead where feasible, the publication of relevant results in peer-reviewed journals and actively engage in dissemination efforts such as scientific conferences and workshops, stakeholder and policy events.

SKILLS, QUALIFICATIONS AND EXPERIENCE

- Master's degree (or equivalent) and relevant working experience in a field related to integrated assessment modeling including economics, engineering, physics, environmental science, energy systems, or other interdisciplinary studies.

- Demonstrated programming experience, including
  - Experience in a modern programming language, preferably R (or Python), is essential as ECE develops its modeling tools using these programming languages.

  - Experience with modern tools and concepts related to scientific software development is an asset, including version control, unit testing, continuous integration, and (automated) documentation.

- Demonstrated knowledge of related fields is an asset, for instance experience with one of the following: integrated assessment modeling, energy systems, econometrics and economic modelling, Life Cycle Analysis, Input-Output, or Stock-Flow

APPOINTMENT TERMS

The successful candidate should be available to take up the position as soon as possible in 2024. We offer an initial fixed-term, full-time employment contract for one year, with the possibility for extension thereafter.

Eligible applicants wishing to work part-time hours may be considered.

Duties will be carried out at the IIASA premises in Laxenburg, near Vienna in Austria (some travel necessary).

The successful candidate will be appointed in accordance with the IIASA profiles for research careers.

WE OFFER

- The possibility to contribute to environmental sciences for sustainability and global wellbeing.

- Career development perspectives.

- An international atmosphere and pleasant working environment in a historic market town surrounded by green areas.

- An attractive salary which is exempt from income tax

modelling. Interest in learning about (some) of these methods is essential.

- A degree of flexibility and willingness to travel.

- Fluency in English and excellent presentation skills.

- 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 environment, and IIASA core values.

in Austria and negotiable, based on the qualifications, skills and experience of the selected individual and *at least* EUR 39,825.00 gross per annum (subject to deductions for health insurance and/or social security).

IIASA salaries are:

- 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).

OTHER BENEFITS

- Educational subsidies for children of school age enrolled in private schools in Austria.

- A generous annual leave entitlement.

- Relocation allowances and paid home leave for employees in scientific and professional categories hired from international locations.

- The possibility to work up to 100 days per year in home office (within Austria).

- 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 Member Organization.

Further Information

For further information about this opportunity please contact:

Bas van Ruijven, Research Group Leader, Sustainable Service Systems (S3) Research Group

Jarmo Kikstra, Research Scholar, S3 research group

For general information about working at IIASA, please contact: 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 reference givers.

Review of applications will begin immediately and continue until the position has been filled.

Deadline for receipt of applications: until filled

APPLY